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On the Arrangement and Description of the Diseases of Bones.
By WILLIAM CUMIN, M. D., Surgeon to the Glasgow Asylum for Lunatics, and to the Lock Hospital.

NOTWITHSTANDING all that has been written on the diseases of bones, the opinions of medical men regarding these affections are, as yet, by no means clear and determined ; and in proof of this assertion, I appeal with confidence to their conversation and writings. Nothing is more common than to hear a bone declared to be carious, when it is necrosed ; and the same confusion and inaccuracy in the employment of these and of other terms are to be met with in the writings of some of our latest and most respectable surgical authors. Mr. Crampton, the Surgeon-General of Ireland, whose abilities and information are highly and justly appreciated, says, "In caries the bone is deprived of life." Mr. Liston wishes to limit the term Caries to such ulcers in "bones as resist the natural efforts of the constitution towards their cure, and require the active interference of art." Mr. Lizars, in the remarks which he has appended to his excellent anatomical *fasciculi*, terms *spina ventosa* "an aggravated species of exostosis, where caries follows with suppuration within the bone;" and he subsequently speaks of mollities ossium and osteo-sarcoma as identical. Mr. Wilson, the late distinguished teacher of anatomy, after having described what he understands by *spina ventosa*, adds, "the term *osteo-sarcoma* has

lately been used to designate this formidable disease." Even Sir A. Cooper, of whose merits it is unnecessary for me to speak, appears to have confounded *osteo-sarcoma* with *exostosis*; for he has described and figured under the name of *Fungous Exostosis*, cases of disease which appear to be truly of an *osteo-sarcomatous* character; while, on the other hand, he has associated this *fungous exostosis* with an affection which has no resemblance to *osteo-sarcoma*, and is truly an osseous tumour. The illustrious Scarpa himself has not always distinguished *caries* from *necrosis* of a bone. "Caruncula, cariosum os a sano undequaque sejungit atque expellit."

In the following paper, I propose, in the *first* place, to exhibit a synoptical Table of the diseases of bones; and, in the *second*. to give brief descriptions of them, with a more extended account of that affection which appears to be least understood, and which has therefore occupied the largest share of my attention—I mean *osteo-sarcoma*.

Table of the Diseases of Bones.

I. *Ostitis.* Inflammation of bone.

II. *Hyperostosis.* Morbidly increased deposition of osseous matter, without the formation of any circumscribed bony tumour.

III. *Osteo-apostema.* Suppuration within the osseous substance.

IV. *Caries.* Ulcer of a bone.

Species 1st. *C. Exedens.* Destructive ulcer of bone.

Species 2d. *C. Ossificans.* Ulcer of a bone, with deposition of new osseous substance, having a morbid and imperfect organization.

V. *Osteo-anabrosis.* Simple absorption or erosion of bone.

VI. *Osteo-necrosis.* Death of bone.

Species 1st. *Osteon Simplex.* Simple loss of vitality.

Species 2d. *Osteon Regenerans.* Loss of vitality, with subsequent reparative process.

VII. *Exostosis.* Distinct circumscribed tumour arising from bone, and consisting partly or wholly of osseous substance.

Species 1st. *Exost. Cellularis.* Tumour or bony crust, enclosing osseous partitions more or less perfect.

Species 2d. *Ex. Petrosa vel Laminata.* Tumour formed of craggy portions, or laminated excrescences of bone, intermixing with cartilage.

Species 3d. *Exost. Eburnea.* Osseous tumour, having the solidity and whiteness of ivory.

VIII. *Osteo-sarcoma.* Sarcomatous tumour, originating from the lining membrane of the longitudinal canals, or the cancelli of bone.

IX. *Osteo-malakia.* Softening of the bones.

Species 1st. *Osteom. Infantum.* The proportion of albuminous substance much increased. Cortex of the bone thickened, texture reticulated.

Species 2d. *Osteom. Adulorum.* Both the earthy and albuminous substance much diminished. Cortex greatly attenuated.

A tenth genus, under the designation *Fragilitas*, may perhaps by some be considered necessary, in order to complete the view of the diseases of bones; but the extreme facility with which bones are sometimes fractured, is symptomatic of several different morbid states, and therefore it cannot with propriety be admitted to constitute a separate genus of disease. 1st, Fragility of the bones is occasioned by the diminished proportion of albumen and superabundance of oil in the bones of the aged, as well as by the thinning of the osseous walls, which has been remarked to take place at that period of life. 2d, It occurs very frequently in *osteo-malakia*, both of the infant and adult, as a consequence of that disease. 3d, Fragility takes place in *osteosarcoma*, when the absorption of the bone has proceeded through a great part of its diameter. Several authors have asserted, that fragility of the bones occurs in connexion with cancer; but on this point my own experience enables me to say nothing; nor have I succeeded in obtaining any satisfactory information regarding it from surgical writers. Petit relates the case of a woman who had long suffered under cancer of the mammae, and in whom tumours formed in the bones of the thigh, arm, and clavicle, with excruciating pain, which continued, without intermission, until fracture at the affected points took place, in consequence of slight exertion. The case appears to me to possess all the characters of *osteosarcoma*.

Simple *nudation*, or exposure of bone, cannot, in strict propriety, be considered as one of its diseases: but it is of great consequence to distinguish this state of the osseous texture, from *osteonecrosis* and *caries*, with which it has been too often confounded. Healthy bone, when its periosteum has been forcibly separated, presents a pinky colour with numerous minute orifices of ruptured vessels: if, on the other hand, the removal of the periosteum has been caused by suppuration,

the colour of the bone, if still healthy, is white; its textures unchanged from the natural state, and no line of incipient separation can be detected around the circumference of the exposed portion. Other diagnostic symptoms of *nudation* might be enumerated; but while those now stated remain, we cannot be assured that the denuded bone is either necrosed or ulcerated; nor should we be warranted in employing any other treatment than that simple mode which exposed bone requires.

I. OSTITIS.

By this term is to be understood simple inflammation of bone; which, although of no unfrequent occurrence, is much less readily excited than the same process in parts of a more sensible, lax, and vascular texture. The changes which take place in the osseous substance during its inflammation, correspond as accurately as the difference of texture will admit, with the phenomena which are observed in that disease, when affecting soft parts; increased supply of blood, augmented temperature, and greatly exalted sensibility. The firmness of the osseous texture renders it more tardy to inflame; but it also aggravates to a high degree the sufferings of the patient, when inflammation has once fairly established itself.

Ostitis terminates in three ways: by resolution, accompanied, I believe, in all cases by the increased deposition of osseous matter in the inflamed part; by the formation of pus, and the absorption of the substance of the bone; and lastly, by the death of the whole, or a part of the inflamed bone.

II. HYPEROSTOSIS.

The employment of this term is rendered necessary, in order to distinguish a morbid increase of the bulk, and probably of the density of portions of bones, from those osseous tumours to which the term exostosis ought in correctness to be limited. Hyperostosis, I believe, always follows the inflammation of a bone, when that process has been arrested before the occurrence of disorganization or death of the part. Mr. Howship has described, with great minuteness, the appearances exhibited by bone when inflamed, and when this addition to its substance has just taken place. The first perceptible change produced by inflammation, is a uniform enlargement of the longitudinal canals, effected by the vessels of the lining membranes, which absorb in a gradual and equal manner the substance in which they are incased. The mem-

branes next become thickened, tuberculated and granular ; and absorption now goes on in so rapid and irregular a manner, that the sides of the canals are in many points scooped out into hollows. When the inflammation has proceeded still farther, the affected portion of bone becomes tumid, and a new deposite of earthy matter is observed to have taken place.

Hyperostosis is not always to be traced to previous inflammation of the affected bone : it occurs after rickets, and is, indeed, the mode which Nature adopts for the cure of that disease. When the constitution rallies, and a deposite of osseous matter takes place to strengthen the softened bones, the process of ossification rarely, if ever, stops within due bounds, but is in most instances excessive, sometimes to a very great degree. Hyperostosis of the bones of the skull occasionally takes place very gradually, and without exciting any suspicion of its existence, until at length epilepsy or loss of intellect, and ultimately death, are produced. Through the kindness of my friend Dr. Corkindale, to whom I have been much indebted for various specimens of diseased bone, I am now in possession of the skullcap of an epileptic female, in which the bones had acquired a great increase of thickness, and are evidently much more vascular than natural. The impression of the middle artery of the dura mater is greatly deeper than common, slight risings are observable on the internal surface of the bones, and the natural concavity of the skull is in several places reduced nearly to an inclined plane by the increase of the ossaceous substance.

III. OSTEO-APOSTEMA.

The formation of purulent matter within the substance of a bone, which is expressed by this term, is a less frequent consequence of ostitis, than the disease which I have just considered. Mr. Howship has given a very beautiful microscopical representation of the appearance of bone, when the inflammation has terminated in suppuration. The osseous walls of the longitudinal canals are there absorbed, so as to form an irregular communication between the medullary cavity and the surface of the bone ; and the sides of the new channel are seen to be in a state of highly increased vascularity. Two cases of abscess within the tibia are related by Mr. Mey. A case of this nature, but in a very advanced stage, was lately seen by me in consultation. A young lady had for more than two years suffered from disease of one of the fingers, which, from its base to its middle, was swoln to

three times its natural size, while it was shrunk and wasted towards the point. The swelling was white, shining, and slightly elastic, but not fluctuating ; and on its surface were three pale fungous ulcers with thickened edges. On dividing the diseased parts after amputation, the knife passed through a considerable thickness of cartilage, and then entered a cavity containing pus, and the remains of the first phalanx of the finger. The fragments of the bone were much eroded, full of holes, and extremely light. The articulating surfaces of the bone were perfectly sound, and the cartilage, which formed the posterior part of the swelling was found to contain a portion of new bone. The bone in this, as in almost all cases where purulent matter was formed within its substance, was in a state of decay, but certainly not necrosed ; for interstitial absorption seemed to have been going on in it to the last, and no line of separation could be detected between the diseased parts and the healthy articulating extremities.

IV. CARIOS.

This term has of late been restricted, by the best surgical writers, to the ulceration of bone. But if we go back to the works of *Monro primus*, we shall find, that the term included, not ulceration only, but nearly all the diseases to which the bones are subject.

Ulceration of bone, or *Caries*, is of two kinds. In the *first*, a process of destruction is going forward, without any attempt to repair the injury. In the *second*, the process of absorption of the osseous substance is accompanied by the formation of a new bony deposite, which is much more irregular in its arrangement, and imperfect in its organization, than the original bone.

The former of these species of caries I propose to name *Exedens*, or eroding. Perfect examples of it are afforded by the extremities of the long bones, after their articulating cartilages have been destroyed by ulceration ; and by the bodies of the vertebrae, after the destruction by disease of the intervening fibro-cartilaginous substance. This form of caries, although not accompanied in the same bone by any attempt at a process of repair, is sometimes productive, by its irritation, of the formation of new osseous matter in a contiguous bone. On inspecting the hip-joint of a girl who had long suffered under disease of that part, I found the head and nearly the whole neck of the femur destroyed by ulceration. The surface was quite rugged, and the bone, which was morbidly vascular, could be readily crushed betwixt the fingers. On the dorsum

of the ilium, and towards the edge of the sciatic notch, I observed a considerable arched ridge of newly formed bone, covered externally by cartilage, to which the contiguous muscular substance firmly adhered. This portion of newly deposited bone served to confine the upper extremity of the femur from passing backwards or upwards, and formed one side of a large cavity, at the lower part of which was the acetabulum, which showed no mark of disease, excepting a slight increase of vascularity. This species of *caries* is also exemplified in most instances of the internal decay of the osseous substance of the teeth; but I am inclined to believe that, in such cases, *caries* is often complicated with *osteo-necrosis*; some portion of the diseased surface suffering from ulceration, while another is necrosed.

Cartes exedeus is also met with in those cases where ulceration spreads from the soft parts to the subjacent bone. About three years ago, a boy came under my care with circular sores of the scalp, one of which had destroyed the soft parts to the extent of a half-crown piece, leaving the bone completely exposed. The ulceration at the circumference had already begun to penetrate the external table of the skull; and the diseased portion, which I still preserve, exhibits a pretty regular groove, as if eaten by some insect, or consumed by the action of an acid. A process of disorganization has evidently been going on in the centre of the exposed bone; but the eroded groove still retains the same pure colour and solid consistence as the soundest bone.

In the second species of *Caries*, which I have named *Ossificans*, the process of destruction is accompanied by a morbid, and generally feeble effort to form new bone. My inquiries into this subject lead me to believe, that, in the incipient stage of this form of *caries*, the bone acquires an increase of vascularity; absorption of its earthy constituents then takes place to a certain extent, and a deposition of gelatinous substance fills the vacant spaces. In strumous cases, this is intermixed with masses of cheese-like substance. An external abscess now forms, which at length bursts, leaving the diseased and transmuted bone exposed at the bottom of the wound. If we now introduce a probe into the wound, and carry it onwards, it readily penetrates this mixture of firm jelly and osseous fibres, which latter communicate through the instrument a grating sensation. As the ulceration proceeds, the lining membranes of the bone fall into a state of luxuriant granulation, the gelatinous substance becomes organized, and a new deposition of osseous matter takes place;

but it is usually small in quantity, and imperfect in its organization. After the disease has continued for some time, the bone is found to have acquired a considerable increase of diameter ; and, if carefully separated from the soft parts by maceration, it is observed to be penetrated by numerous circular holes, as if perforated by a small auger, or by some insect. Spicular vegetations of bone commonly rise around these apertures, while, on other parts, the bony fibres are massed together like streaks of wet stucco. The whole affected portion of bone is very light, and its general aspect may be compared to a petrifaction of the slender fibres of moss, or the spongy sugar of the confectioner.

It is to this form of disease, which I have ventured to arrange under the head of *Caries*, that the best informed writers have appropriated the name *Spina Ventosa*. But there has existed, from the times of the Arabians down to the present day, so great an obscurity and confusion in the employment of this expression, that it would be wise, in my opinion, to suffer it to fall into disuse. No writer has been able to explain satisfactorily, the origin and primitive meaning of *Spina Ventosa* : and its signification has been so extensive, that, according to some, it included a great proportion of all the diseases to which bones are subject, and one of the diseases of joints. Dr. Parr, a man of no mean literary attainments, gives as the synonyms of *Spina Ventosa*—*Osteo-sarcoma*, *Sideratio*, *Cancer*, *Gangræna*, and *Sphacelus*, *Ossis Teredo*, *Fungus Articuli*, *Arthocace*, *Exostosis*, *Paedarthrocace*.

Under such circumstances, it seems altogether hopeless to attempt to retain, with any prospect of advantage, this expression, which has absolutely nothing, either in its etymology or its form, to recommend it to our notice.

V. OSTEO-NECROSIS.

By this term it is proposed to designate simple erosion, or absorption of bone—a process which is very nearly allied to destructive *caries*, but differs from it in the particular of being at all times unaccompanied with the secretion of pus from the surface of the affected bone. Instances of this affection are presented by bones which have suffered from the pulsating action of aneurismal tumours ; and remarkable examples of the disease have been occasionally met with in the bones of the cranium. Mr. Russell has detailed several cases, in which portions of bone were separated by this process of erosion. He has also seen the absorption proceed in such a manner as to leave an aperture in the cranium, without the

separation of any bone, or any appearance of ulceration. A remarkable instance of the same disease is given by Mr. Wilmer, from the practice of Mr. Harrold. It is by the process of *osteo-anabrosis* that nature produces the removal of the milk teeth ; and a corresponding disease is sometimes met in the adult, where the teeth become loose, and when extracted, their fangs are found extensively absorbed, although by no means in a state of ulceration.

VI. OSTEONECROSIS.

This term appears to be preferable to *necrosis*, because the latter has been employed to denote the dry gangrene of soft parts ; while, by recent writers, it has been restricted to that form of disease in which the death of bone is accompanied or immediately followed by an ossific process set up by nature to repair the loss that has been sustained. The introduction of the term osteo-necrosis enables us to avoid both of these difficulties, and to distinguish the disease into two species.

Species 1st. *Osteonec. Simplex*, when the bone merely dies, and is thrown off by the process of exfoliation. I admit that this rarely takes place without any attempt to repair the loss by the formation of new bone ; but I believe that it does sometimes occur in this pure form, in the bones of the skull. The mere loss of vitality, but not the exfoliation, certainly takes place in *sphacelus* of a limb, and when the constitution sinks rapidly after the death of a portion of bone, so as not to afford time for the reparative process to commence.

Species 2d. *Osteonec. Regenerans* is the *necrosis ossium* of Mr. Russell, and the *necrosis* of common surgical language. From a careful examination of several recent bones affected with this disease, one of which, now in my possession, I consider peculiarly illustrative, I have been led to adopt the opinion so ably supported by Professor Macartney, and to believe, that after the death of a portion of bone, the first step in the process of repair is a change in the periosteum, which acquires increased thickness and a softened cartilaginous texture ; and thus altered, it forms the nidus for the superficial deposition of osseous matter. The neighbouring old bone which has not perished, also receives an addition to its substance, evidently produced by the ossific action of its own vessels ; its surface becomes of a darker colour than natural, and acquires a scabrous roughness. The new-formed bone sometimes assumes the appearance of irregular vegetations ; at others it forms a continuous crust ; its texture is much less fibrous than original bone, and its surface appears like melted

bees wax, or like the new bark which is observed to extend from the edges of superficial wounds in trees. But in process of time, this newly-formed bone gradually acquires a more perfect organization, and at length its texture approaches nearly to that of bones which have never suffered from the action of disease. The result of the process of regeneration is in all cases to augment the diameter of the affected bone; and, in two instances which have come under my observation, it appeared to be distinctly increased in length. Thus *hyperostosis* takes place as a consequence of the death of bone, and of the inflammation thereby excited.

As the newly produced bone is in most cases so situated as to confine the necrosed portion, the process of throwing off the dead part is often tedious and difficult. When necrosed bone has been long retained, it acquires a high degree of putrescence, and exhales a nauseously offensive odour. Its colour is usually ash or wood brown, and in some instances it becomes as black as coal. Through the kindness of a medical friend, I am now in possession of a specimen of diseased femur, in which this appearance is beautifully seen, as well as the thickened and cartilaginous state of the periosteum which precedes the formation of new bone. In this instance, the disease had existed for the long period of fourteen years, and yet the living bone seemed to be still receiving an increase of diameter. The offensive odour was particularly strong, proceeding evidently from the necrosed and putrid bone, and not from any ulcerated surface. Indeed, I am now convinced that *caries* is never productive of this well-known fetid odour, unless the ulcerated portions of bone be intermixed with others in a state of *necrosis*. But in hazarding this opinion, I know that I am at variance with many able practitioners, who believe that this odour furnishes a distinct proof of the existence of *carious* bone in any ulcer or sinus from which it is emitted.

VII. EXOSTOSIS.

By the term *Exostosis* is to be understood a circumscribed tumour formed on a bone, and consisting wholly or in part of newly-formed osseous matter. Accurate examination of exostosis in their different stages proves, that the first step in the process is the deposition of cartilage, or of a substance resembling it, which is afterwards followed by the secretion of bone. Perhaps the most remarkable instance of this disease on record is that detailed by Mr. Freke.

Exostosis may be divided into three species.

Species 1st, *Exost. Cellularis*. In this the tumour consists of an external crust, within which are numerous bony partitions, together with a quantity of softer substance, generally of the nature of mucus, jelly, or cartilage, or atheromatous or fatty matter. A remarkable variety of this species is afforded by the existence of hydatids within the cavity of the *exostosis*. Another very interesting form of cellular *exostosis* is exhibited by those swellings on the phalanges of the fingers and metacarpal bones, which render the hand deformed and even monstrous. Severinus, Mery, John Bell, Dr. Munro *tertius*, and others, have described and figured such tumours. In some of them the hand had acquired the grotesque form of a tuberous root, and in others the extremities of the fingers appeared like the talons of a bird of prey. These cases are distinctly of the nature of *exostosis*, cartilage being first secreted, and afterwards osseous matter. Severinus tells us, that in one of his cases the morbid substance resembled the boiled root of the *cyclamen*, was friable, and readily yielded to the finger; while M. Mery and Dr. Munro *tertius* have given accurate drawings of the macerated bones of the hand, showing distinctly the newly-formed shells of bone. Remarkable cases of cellular and hollow exostosis are related by Saviard and Petit. Kulmus gives a case of enormous cellular exostosis, nearly lbv. in weight, which arose from the clavicle, and consisted partly of bone, and partly of cartilage, with cells containing a pultaceous, orange-coloured substance, resembling marrow.

Species 2d, *Exost. Laminati vel Petrosa*. The laminated or craggy osseous tumour consists of a mixture of bony excrescences and cartilage. In this species, no osseous shell exists; and after maceration, the bony growth presents the appearance of foliated crystallizations, or craggy adherent masses. Many beautiful specimens of this form of exostosis are to be found in most collections of pathological anatomy; and a remarkable case of the disease is detailed by Boyer. He considers this case to afford an example of the combination of *osteo-sarcoma* with *spina ventosa*; but from the very minute description of the disease which he has given, and the accompanying engraving of the macerated bone, I have no hesitation in referring it to the craggy exostosis.

In some instances of this form of disease, the new deposition consists not of osseous substance, but of the earthy salts of bone, forming a mere unorganized mass. In the Hunterian Museum at Glasgow there is a large tumour of this description, enveloping the lower extremity of the thigh-bone, the condyles, and even part of the articulating surfaces.

Species 3d, *Exostosis Eburnea*, the osseous tumour possessing the solid texture and whiteness of ivory.

Petil relates a case of exostosis of the temporal bone, in which the tumour was as large as a melon, and as hard and white as ivory. No prominence or alteration of any kind was perceptible on the internal surface of the bone.

VIII. OSTEO-SARCOMA.

Osteo-Sarcoma is a disease which as yet is but ill defined, and which has served, with some authors, as a general receptacle for extraordinary and anomalous cases. Mr. Samuel Cooper, whose learning and research are of a high order, and the able authors of the *Diction. des Sciences Medic.* have presented us with very meagre articles under the head of osteosarcoma. So undefined, indeed, are the ideas of the author of the Surgical Dictionary on this subject, that he has referred, under that title, to a case of exostosis of the clavicle, and to one of fungus of the autrum.

With the view of removing some portion of the obscurity in which this subject is at present involved, I propose that the term Osteo-sarcoma should be limited to a degeneration and morbid growth of the lining membranes of the longitudinal canals or cancelli of bones, accompanied, in all cases, by absorption of the solid osseous substance. The disease is therefore essentially one of destruction of the affected bone, which is produced partly by the pressure of the enlarging tumour, and partly by the diversion of the fluids circulating within the bone to the support of this morbid growth. It always originates within the periosteum, and retains that as its investing membrane, even after the bone has been fairly divided by the absorption of its substance. The contents of the osteo-sarcomatous tumour are of different descriptions, not unfrequently having the texture and colour of an absorbent gland, sometimes presenting the appearance of a bloody-coloured fungus, and at other times resembling old cheese or cerebral matter. They have been observed also occasionally to have been converted almost wholly into a fluid resembling thick gruel or soup. The disease is generally of slow progress; and in its commencement the symptoms cannot be readily distinguished from those of chronic rheumatism, or from syphilitic pains.—After some time, a tumour is perceived in the affected bone, at first firm and resisting, but afterwards becoming softer, sometimes fluctuating, and in certain cases communicating to the hand a distinct pulsation, synchronous with that of the artery of the limb, and capable of being interrupted by com-

pressing the arterial trunk above. After a longer or shorter interval, the constitution of the patient becomes affected, hectic fever, colliquative perspirations, and diarrhoea make their appearance, and at length destroy life. Towards the close of the illness, fracture of the bone at the affected part very commonly takes place on some slight exertion, aggravating, in a remarkable manner, the general distresses of the patient, but rather relieving than increasing the distensive pain in the bone.

The following is the history of a case of osteo-sarcoma which I had under my care some years ago. Early in the month of June I was requested to see a gentleman aged about sixty, on account of a supposed rheumatic affection of above three months' standing. He complained of severe pains in the limbs and through the pelvis, with lameness and a feeling of debility. His countenance was of a sallow and somewhat leaden colour. Pulse strong and regular, appetite tolerably good, bowels inclined to constipation. Midway between the trochanter major and the middle of the right thigh, was a tumour about two inches in length, and one in breadth, apparently occasioned by a prominence of the periosteum. Immediately under the head of the left tibia, on the mesial side of the tubercle, was a similar tumour, equally fixed and deep-seated, but smaller in size. I prescribed the decoction of sarsaparilla, and applied repeated blisters to the tumours; and after some continuance of this mode of treatment, his condition appeared, on the whole, rather improved. But about the middle of July, as the disease certainly did not show any symptoms of decided amendment, and the patient was anxious to try what benefit was to be derived from change of air, I agreed that he should proceed to the seacoast for this purpose, as well as with the intention that he should make use of the warm sea-water bath. I directed, at the same time, that the sarsaparilla should be persevered in for a fortnight longer. In the end of the month, having learned that he had rather lost ground, I consented that he should begin a mild alterative course of mercury. Under this, and the warm sea-water bath, he continued gradually to become worse until the 12th of August, when, in stepping into bed, he slipped his foot, and fractured his right thigh in the situation of the tumour.— When I saw him, three days after this accident, he was in a very miserable and reduced state. Pulse frequent and feeble: skin bedewed with clammy perspiration; nights sleepless; countenance sunk and haggard. The fractured limb was lying apparently easy, in the half bent position. The tumour

on the opposite tibia had increased considerably in size, was much softer and somewhat discoloured, and pulsated very distinctly. No preternatural motion or thrilling was perceptible in the ham, although carefully examined. In this state, temporary relief was obtained from *hyoscyamus*, black drop, and aromatic sulphuric acid ; and life was prolonged, under great suffering and gradually increasing debility, until the beginning of October, when the patient sank under the accumulated load of his distresses.

The body was inspected by the very judicious practitioner under whose immediate care the patient had placed himself after leaving Glasgow ; and to him I am indebted for the substance of the following particulars, as well as for a portion of the tumour and of the thigh-bone from which it originated.—One half of the right thigh-bone was in a state of disease, which, I presume, from the portion in my possession, was merely the change produced by extensive absorption ; and at the fractured part, only fragments of the diseased bone remained. A large tumour attached to the bone, and distinctly originating from the membrane of the medullary cavity, was found in that part which corresponded to the external swelling. The texture of the morbid growth resembled very much that of an absorbent gland ; and when cut into, it gave nearly the same resistance to the scalpel as liver or kidney. Its colour was greyish or ash brown, and the muscles in the neighbourhood were flabby and dark coloured. The tumour on the tibia seemed, like that just described, to arise from the interior of the bone, which was destroyed through nearly two-thirds of its thickness. Its texture was rather firmer than that of the tumour on the thigh, but otherwise similar ; and on cutting into it, a quantity of dark-coloured blood escaped. Nothing, however, in the least resembling aneurism could be detected. On corresponding with the gentleman who made the dissection, I found him disposed to admit, that the tumour might have received its pulsating motion from the popliteal artery, in consequence of the originally interposed bone having been removed by the progress of the disease.

In the Hunterian Museum at Glasgow, there is a preparation which bears a near resemblance to the tumour in the tibia, in the case just related. The arteries of the periosteum are beautifully injected, and appear evidently much enlarged. The tumour, which is seated within that membrane, extends around nearly the whole circumference of the bone, which it has destroyed very extensively ; so much so, indeed, that I have no doubt it must have been agitated during the patient's

lifetime by the pulsation of the popliteal artery. Incisions have been made at different points into the tumour, exposing to view a brownish spongy-looking mass, intermixed with extravasated injection. The tibia appears to have suffered fracture a little below its middle; and fracture had also taken place in the fibula, close to its head; but both of these, especially that of the tibia, had been united long previous to the patient's death. No account of the preparation is to be found in the Catalogue, which I have carefully consulted; but the nature of the disease is obvious on inspection.

In the same valuable collection of anatomical preparations, is another beautiful specimen of osteo-sarcoma, affecting, in this instance, the bones of the thigh. The tumour has destroyed the lesser trochanter, and the whole thickness of the femur for some space. The sac is evidently formed by the periosteum; and when cut into, it exposes the ragged extremity of the divided bone, and the substance of the tumour, which is a moderately solid homogeneous mass of a light-brown colour. This, like the last, is marked on the jar, but not entered in the Catalogue. An interesting case of osteo-sarcoma of the cranial bones, accompanied by tumours in the encephalon, is given by Mr. Wishart. In this instance, the distending force of the morbid growths had caused not only absorption of the bone, but separation to a certain extent of the tables of the skull. A similar effect has also been observed in the long bones from the progress of this disease.

In the autumn of 1823, I saw, in consultation, at the Royal Infirmary at Glasgow, a patient in whom the disease now under consideration was well exemplified, as the dissection of the tumour afterwards satisfactorily proved; and through the kind permission of Dr. Young, who was at that time attending surgeon, I am enabled to state the following interesting particulars which I have collected regarding it. The whole inner side of the left knee-joint, and particularly the internal condyle of the femur, was occupied by a soft pulsating tumour, which, when firmly compressed, diminished distinctly, and the fingers seemed to sink into an empty cavity. Compression of the common femoral artery stopped the pulsation of the tumour. The knee-joint was stiff and contracted, and the soft parts in the ham thickened. The patient complained a good deal of pain in the tumour, which was stated to be of ten months standing; and his health was considerably affected. After amputation of the limb, and the injection of the popliteal artery, the tumour was found to be about the size of a large fist enclosed in the periosteum, and formed within the

substance of the inner condyle of the femur, which was extensively removed by absorption. It occupied also a portion of the articulating surface, the remaining portion of which yielded to the pressure of the finger like an elastic shell, in consequence of the excavation within. The tumour was closely invested at its lower part and on the inner side, by the capsular ligament, and by that which is stretched posteriorly between the femur and tibia. Its posterior surface lay close upon the popliteal artery, from which it was separated only by a small quantity of cellular membrane. All the parts exterior to the capsule were in a natural state, with the exception of a slight displacement of the adductor tendons. The cavity of the knee-joint contained, as already stated, a portion of the projecting tumour, together with a small quantity of bloody serum ; and the parts within the joint were more vascular than natural. The middle and the superior internal articular arteries were enlarged, and the latter ramified over the surface of the tumour, and sent twigs into its investing periosteum.—The tumour was spongy and elastic ; and when laid open some days after the amputation of the limb, was found to contain a soft brain-like matter, which fell out as soon as the incision was made.

The pulsation, which in certain circumstances accompanies osteo-sarcoma, is apt to lead to the belief that the tumour is an aneurism ; but I am convinced that in most, if not in all cases of this disease, that symptom arises from the extensive removal of the bone, and the contact of the tumour with some considerable artery, or with the fat and cellular substance immediately surrounding it. When, in addition to the vicinity of an artery, the contents of the tumour are pappy or nearly fluid, and its situation is such, that, by pressure, a part of it can be forced into the cavity of a joint, the deception is almost complete ; for, in this case, the tumour not only pulsates, but it can be made to diminish by the continued pressure of the hand. The case which I have now briefly related was peculiarly puzzling, from the circumstances first mentioned. A correct diagnosis in such cases can be obtained only from an attentive consideration of the history of the disease, and of the site of the tumour—the manner in which it rises when the hand is removed—and the absence of all thrilling motion in the artery above the swelling.

Osteo-sarcoma is, in the opinion of most writers, nearly allied to, if not identical with, cancer ; but I am inclined to think, that although all the varieties of the disease are highly formidable, they are not all truly cancerous. The case

which I have first detailed appears, from all its symptoms, and more especially from the disease having shown itself in two different places at the same time, to have been of a carcinomatous nature ; while, on the other hand, the case in which the knee-joint was affected, did not, in my opinion, exhibit any of the features of cancer.

Osteo-sarcoma is the *fungous exostosis of the medullary membrane* of Sir Astley Cooper. The disease is admirably described by him under this name. Several interesting cases of it are related ; and two figures are given which satisfactorily elucidate the true nature of the affection. The expression by which Sir Astley Cooper has chosen to designate this disease, is certainly ill calculated to distinguish it from affections of the bones possessing a very different nature ; but he has involved the subject in still greater confusion, by connecting the disease in question with what he has named *Periosteal exostosis of a fungous character*. However formidable that affection may prove, & however similar in its external characters it may be to what he has named *fungous exostosis of the medullary membrane* ; I think it will be admitted, that it is of a nature essentially different from osteo-sarcoma, when we consider the following facts regarding its structure. " Such tumours," says Sir Astley Cooper, " are generally found on dissection covered with a thickened periosteum, within which a white elastic substance is discovered, having numerous small spiculæ of bone passing in radii from the surface of the original bone : the shell of the bone is in great part remaining : I have seen this, however, in some places removed by absorption. Within the cancellated structure there appears, in some instances, to have existed a slight inflammation ; for, in the cancelli, I have seen small portions of ossific matter deposited." But to place beyond all doubt the real nature of this species of tumour, to which Sir A. Cooper has given the name of *fungous*, he adds, that he made a section of a tibia in which a large exostosis of this kind had grown, and, by immersing part of it in diluted acid, he found that " a bed of cartilage had supported the bony deposite. The shell of the bone in the remaining portion of the section continued entire ; spiculæ of bone in radii passed from the shell of the bone to the periosteum, whilst in the cancellated structure, opposite to the seat of the exostosis, a very slight deposite of bone, in small nodules, had taken place." In fact the *periosteal exostosis of a fungous character* is distinctly to be referred to the tumour already described under the name of *Exostosis laminata* ; and I have no doubt that it will always be found to

possess an increasing solidity and power of resistance to pressure, which are never met with in true osteo-sarcoma.

Under the head of Osteo-sarcoma, I would arrange those rare cases in which the cancellated structure of a bone is absorbed, and the cavity occupied by hydatids; although this affection is, without doubt, different from the true osteo-sarcomatous tumour. Sir. A. Cooper details a case of soft tumour of the upper part of the tibia, which was found, when laid open, to contain hydatids of the common globular form: a large nest of them was also discovered within the bone; and the sore speedily assumed so threatening an aspect as to render amputation necessary. He relates another case, in which the head of the humerus was reduced to an expanded shell, and several hydatids were found in the situation of the cancellated structure. Among the numerous valuable preparations in the Museum bequeathed to our University by Dr. Hunter, there is one of the lower extremity of the femur reduced to a thin shell, and perforated by several irregular openings. The cavity thus exposed to view is filled with small masses of suet-like substance, and with numerous shrivelled hydatids: many of the latter are also seen lying in the bottom of the jar, like the shrunk skins of the white grape. The articulating surface of the bone is in part flattened, as if all bony support were gone within; and even the cartilage itself is reduced in thickness. An aperture in the side of one condyle is seen plugged up by an hydatid; and, in the popliteal aspect, the bone appears to be absorbed for more than the breadth of a shilling, the deficiency being covered by membrane, through which I have no doubt the artery communicated its pulsation to the whole tumour.

The destruction of the solid substance of bones is produced not only by the action of morbid growths originating within the osseous structure itself, but by the spreading of disease from contiguous parts, as in cancer, and, above all, in fungous haematoxodes. To the latter of these diseases are to be referred many of those frightful cases of enormous tumour which are met with in the records of medicine. The case of the priest described by Richerand, I conceive to have been of this nature; as well as that of the Spaniard, related and figured by Severinus. I am disposed also to refer to the same destructive affection, the case detailed by Mr. Balfour in the fourth volume of the *Medical Observations and Inquiries*.

IX. OSTEOMALAKIA.

I must crave indulgence for the adoption of this term, to

which I have been induced by the existing deficiency of a generic word capable of denoting both *ricketts* and *mollities ossium*.

Osteo-malakia varies in its characters, according to the age of the individual in whom it occurs; and hence it may with propriety be divided into *osteo-malak. infantum*, and *osteo-mal. adulorum*. The former is usually named Rickets; the latter is a disease of less common, although by no means of unfrequent occurrence, and is known among British writers by the names Mollities ossium and Malacosteon. In the first species, or rickets, the bones possess a spongy reticulated texture—contain a large proportion of cartilaginous substance, and, when dried, appear like bones that have been steeped in an acid. But in *osteo-mal. adulorum* the bones are reduced to mere shells, resembling thin pasteboard or the rind of cheese, and are readily bent or cut. In this species, the bones are found to contain large cavities, which occasionally communicate with the surrounding soft parts, and are filled with oily matter, resembling boiled marrow, or with masses of coagulated blood, or with a soft organized animal substance.

Numerous highly aggravated cases of osteo-malakia in adults are to be found in the records of our profession; but none of them appear to contain more accurate details than that related by Mr. Thompson. The dissection of the subject of this case was made under the direction of Dr. William Hunter, who has preserved in his museum, now deposited in our University, several of the diseased bones. (L L. I. L. L. 5., and probably L. L. 3.)

When the tibia was cut into in the living body in this case, the shell of the bone was of the thickness and solidity of the rind of cheese, and the whole interior was occupied by a dusky red or liver-coloured flesh, which was devoid of sensibility. No hemorrhage followed the removal of the osseous covering. The appearances presented on making incisions into the bones after death, were exactly similar. The cartilaginous coverings of the extremities of the bones were much thinner than natural; but the external surface was polished, and in some parts elevated into bumps.

I have now considered, in succession, all the diseases of bones which appear to me capable of being reduced to a regular description and arrangement; but besides these, we occasionally meet with anomalous and extraordinary cases, which have no exact parallel in the records of pathological anatomy. Of this description is the very remarkable case related by Mr. Pierce; and others might be discovered by a

careful examination of the transactions of learned Societies, and the collections of curious histories of disease with which the literature of our profession abounds.

II.

(From Anderson's Quarterly Journal.)

Elements of Medical Jurisprudence. By THEODORIC ROMEYN BECK, M. D., Professor of the Institutes of Medicine, and Lecturer on Medical Jurisprudence in the College of the Western District of the State of New-York, &c. &c. Second Edition, with Notes, and an Appendix of Original Cases and Latest Discoveries. By WILLIAM DUNLOP, Member of the Royal College of Surgeons, London; of the Medico-Chirurgical, and of the Wernerian Society of Natural History, Edinburgh; and a Lecturer on Medical Jurisprudence, &c. &c.

We congratulate our readers upon the appearance of this admirable work in an English edition, which may be considered, in some respects, superior to the American one, from being enriched with many valuable notes by Mr. Dunlop, the well known Lecturer on Medical Jurisprudence. Of a work which has embodied in itself almost all that was previously worth knowing on the subject; a work so elaborate in its execution, and so copious in its references, we cannot speak too highly; and we advise every member of the profession to add it to his library. We hope soon (probably in our next Number) to finish our review of it; but, in the mean time, we shall make Mr. Dunlop's notes the subject of the present article.

Feigned Diseases.—The first notes of the Editor are on feigned diseases. Some persons have been able to conceal the pulsation of the radial artery; and in such cases it behooves the physician to examine the other arteries of the body.

"I have seen a gentleman," he says, "who by the exertion of the muscles of the arm and thorax, could stop the action of the pulse at the wrist, but in so doing he required to call into action all the muscles of the arm, so that should a *malingerner* attempt this, the cheat would be easily discovered by feeling the arm above the elbow. It was a preparation in the Museum of Mr. Alan Burns, and which, I believe, is at present in the possession of my friend, Mr. G. S. Pattison, of Baltimore, United States, where a slip of muscle passed across the humeral artery, and impeded its action. On inquiry being made, it was found that the subject had been a servant

girl, and though strong and healthy in other respects, she could never, for any length of time, pump a well, nor switch a carpet."

So that in some cases it may be a natural defect. The detection of those persons who pretend to pass sand with their urine, is not difficult; as they generally, in their impositions, use such substances, as never were, nor could be, excreted from the bladder; for instance, Mr. Dunlop mentions a woman who, in the Glasgow Infirmary, used pounded coals for the purpose of deception. Artificial ulcers, also, have frequently been excited with astonishing perseverance and address; and the Editor mentions a soldier, who boasted to him of having obtained his discharge, in this way, from six different regiments.

"In the York Hospital," he says, "in the years 1812-13, we had many cases of this kind from the Peninsula, and were obliged to lock up the leg in a wooden box, prepared for the purpose, in order to secure ourselves against the patient tampering with the sore."

At Sheerness, in the convict hulks, ulcers were not long ago occasioned by a process termed, in the flash language, *fox hunting*; which consisted in rubbing in the shin bone with the thumb, the sand used for scouring the deck. The propensity to this disease was cured by flogging.

Some men, Mr. Dunlop informs us, have shown considerable dexterity in producing the appearance of a febrile paroxysm. This is done by scrubbing the skin with a hard brush, previously to the physician's visit; and in the General Hospital, at Chatham, the practice of exciting the action of the heart was lately carried to a great extent. This was done by taking fifteen grains of hellebore for a first dose, and four grains daily, afterwards. One man killed himself by taking an over dose. The practice was introduced by a fellow who had been servant to a veterinary surgeon.

Speaking of artificial fits, Mr. Dunlop says:—

"A case is related of a country boy, who feigned epilepsy to avoid work. A surgeon was called, who suspected the deceit, and observed to one of the bystanders, that if it were a true fit, as he thought it was, the patient would turn round on his face, and bite the grass; this he did, and so betrayed himself. On occasions of this kind, it is proper to examine the mouth for soap, which is easily done by pressing the cheeks against the grinder teeth. I once saw a pseudo epileptic in Edinburgh recovered by the simple expedient of calling a police-officer."

Nostalgia is sometimes counterfeited; and then, it is said, the patient, contrary to the real nostalgia, expresses a great desire to visit his native country. We once saw the disease in a soldier, who frequently begged to be sent home, even till within a few days of his death. He died of tabes mesenterica. Mr. Dunlop seems to be surprised at having met with the disease in a lad from the fens of Lincolnshire, and in one who had been a London pickpocket; but, probably, it is neither beauty of situation, nor salubrity of climate, but the memory of past enjoyment, or the hope of future pleasure, that fascinate the sufferer in nostalgia.

Mr. Dunlop has known a person, who feigned deafness, have such command over himself, that he did not seem to notice the report, when a pistol was fired close to his ear; but when the same experiment was tried, after he had been put to sleep by opium, he started out of bed.

"Fodere says," as the Editor remarks, "that a good way to detect pretended deafness and dumbness, is to say something deeply interesting to the patient in his presence, and mark the effect it produces on his countenance. Whether the *great unknown* has studied Fodere or not, it is impossible to determine; but he illustrates this admirably in Peveril of the Peak, where Fenella betrays herself on hearing that Julian is assassinated."

The great unknown, however, is too well acquainted with all the workings of the human mind, to need the assistance of Fodere, or that of any other man, in describing what is natural to it.

Disqualifying Diseases.—Mr. Dunlop observes that the army has become by far too nice in the selection of recruits.

"Large, broad, or splay feet, for instance," he says, "are at present, inadmissible; a regulation which amounts almost to a virtual exclusion of the inhabitants of the Highlands of Scotland from his Majesty's service, a service of which, according to themselves and Colonel David Stewart, of Garth, they are so exclusively the ornaments."

Of this passage, reflecting in some degree on a meritorious class of men, we cannot but disapprove; and yet we solemnly declare that we have not a single drop of Highland blood in our veins. It is not, we believe, the only instance in the Volume, in which the Editor shows Anti-Celtic feelings.

"The other case," says Mr. Dunlop, "I should be afraid to state, but that I had it from a gentleman of unquestionable veracity. The wife of an officer of a Scotch militia regiment had long been married, without having a child. One day,

while bathing her feet in her bed-room, her servant heard the cries of a child ; she rushed into the room, and found her mistress lying back in a chair in a swoon, and a new-born infant struggling in the tub at her feet. She raised the child, and both it and the mother did well. In this case, neither the lady nor her husband had the slightest suspicion that she was pregnant."

On the subject of infanticide, we do not find that Mr. Dunlop has advanced any thing new or striking. It may be observed, however, that the surgeon or midwife who, by mechanical means, should procure abortion, though not liable by the statute law of England and Scotland to the punishment of death, will be condemned, in the latter country at least, to fourteen years' transportation. For the administering of drugs, for the purpose of abortion, the punishment in both countries is death.

On the subject of *identity*, particularly that of dead bodies, we extract the following note, though more applicable to juries than to gentlemen of the medical profession :—

"When witnesses," says Mr. Dunlop, "swear to the identity of a dead person, unless their *causa scientiae* consist in scars, tattooing, or other indelible marks, their evidence should be taken with the greatest possible caution by the jury; for very soon after death, such a total change of the features takes place, that it is impossible for the nearest relations to recognize them. This is finely illustrated in a case tried before the High Court of Justiciary in Edinburgh last winter, (I quote from memory, having no documents.) A resurrection-man was tried for raising the body of a young woman from the church-yard of Stirling: nine weeks after death, the body was discovered and identified by all the relations, not only by the features, but by a mark which they believed could not be mistaken, she being lame of the left leg, which was shorter than the right. There was a good deal of curious swearing as to the length of time after death, that the body could be recognized, but the jury were convinced that the *libel was proven*, and gave a verdict accordingly. Now I am certain that this was not the body of the woman who was taken from the church-yard of Stirling, but one that, at least six weeks after the time libelled, had been buried in the church-yard of Falkirk, from which she was taken by this man, who also took the other, for which he was tried; she also was lame of the left leg: thus, though guilty of the offence laid to his charge, he was found guilty by a mistake of the *corpus delicti*."

Mental Alienation.—We now come to the subject of men-

tal alienation. It has been often feigned; and in this case, if the feigner is a person of ability, it may be difficult of detection.

"The best mode," says the Editor, "that has yet been discovered for forcing a man who feigns madness to confess and desist, is by the use of the whirling chair, that is, a chair placed upon a spindle, which revolves upon its own axis, and is turned by a wheel and crank, with the rapidity of the fly of a jack; it produces nausea even to syncope, and after two minutes of such discipline, few men can command spirits sufficient to act any part. It was by this means that M'Dougal, of Glasgow, was rendered sane when he feigned madness, to avoid being tried for sinking ships, to defraud the underwriters; but he betrayed himself to the medical men by the common fault of impostors, not having 'a method in madness,' but mixing up the two irreconcileable characters of

"The moping idiot, and the madman gay."

Dr. Beck having, with great simplicity, mentioned from Zacchias, the feigned madness of Ulysses, Solon, and Brutus, Mr. Dunlop has archly observed that he might have mentioned King David also, "when his hand was in." But from the able manner in which Dr. Beck has written on the subject of insanity, the Editor has had little opportunity of shewing his research.

Persons found dead.—In the circumstance of a person being found dead in Scotland, a law officer makes an immediate and ample investigation of the case; and no suspected person is committed to prison, Mr. Dunlop informs us, without sufficient evidence. In that country, the office of coroner is not known.

The rules to be observed in the examination of dead bodies, must be drawn from many different sources. In addition to the authors quoted by Dr. Beck—

"Very excellent rules," says Mr. Dunlop, "for the dissection of bodies for practical purposes, will be found in an Essay on the subject, by M. Renard de Chalon, published at Paris in 1819, and bound up with some other Essays on legal medicine; and also in the instructions of Mr. John Shaw, of the Great Windmill-street Anatomical Theatre, as laid down by his Manual for the student of anatomy."

We may mention also the late work of M. Chaussier, reviewed in this Journal. Every part of the body should undoubtedly be examined.

"A learned Professor," says Mr. Dunlop, "in a certain northern University, gave his pupils a very different advice;

• When,' said he in his lectures, ' you find any appearance sufficient to account for death, rest satisfied with that, and inquire no further ; as further examination will only tend to embarrass your evidence, and render it contradictory.' We have all heard of a worthy country justice, who made it a rule never to hear both sides of a question, because, when he only heard one, he could decide without hesitation ; but hearing both only puzzled him."

Of the modes of *suicide*, that which is done by a handkerchief tied round the neck, and twisted with a stick, has been thought to be barely possible ; and our readers will recollect that in one of our late Journals, Chaussier is rather sceptical on this point.

" A navy surgeon," says Mr. Dunlop, " a friend of mine, related to me the case of a Malay, who, on board of a man of war, in the East Indies, had made repeated attempts to commit suicide, and at last succeeded by the means alluded to in the text. He tied a handkerchief round his neck, and with a small stick twisted it several times, and then secured it behind his ear to prevent its untwisting. Jealousy was the cause assigned for the act.

On the natural *combustion of the human body*, Mr. Dunlop has given the case of the blacksmith, in France, who lately began to burn, and could find nothing powerful enough to quench the flame but *holy water*.

External Injuries.—The uncertainty of prognosis in wounds of the head is well known. A trifling wound is often fatal ; while another of a dreadful aspect will terminate favourably in a short time.

" A soldier," says Mr. Dunlop, " got drunk on the line of march, and was put into a baggage waggon, out of which he fell, his head coming right in the track of the wheel, which passed obliquely over it, stripping the whole of the integuments off one side of it, and leaving the bones completely bare. The integuments were replaced and secured by stitches, and the whole kept *in situ* by means of bandages. He travelled for four days on the waggon, when he was put into the hospital, and in less than a fortnight was able to resume his duty.

Such cases are by no means uncommon. We could give several which have fallen under our own notice. A slight injury inflicted on the eye has often caused death ; while, at other times, that organ has been destroyed without danger to the patient. Of the latter, Mr. Dunlop gives the following circumstances :—

" Mr. Liston, of Edinburgh," he says, " related to me the

case of a man who, while blasting the roots of a tree, had a splinter driven into the eye, which, from its length, must have passed through the foramen opticum, and penetrated into the brain. Mr. Liston removed it long after, and the man recovered."

The Editor has also made some remarks on the bad effects which follow blows on the nose; and he observes that death may ensue from the wound of an artery of the cheek, where the bystanders have not presence of mind to apply pressure with the finger and thumb.

"Wounds," he says "of the artery sometimes cut in dividing the frænum of the tongue, are easily commanded by squeezing the divided end in a cleft twig covered with lint."

Wounds of the trachea, and œsophagus, of which Mr. Dunlop has given some interesting cases, are for the most part fatal; but simple wounds of the trachea are often cured. Nor are wounds, which have penetrated from one side of the thorax to the other, necessarily mortal: there are numerous cases of recovery from such wounds on record, and the Editor has given an extraordinary one from his own practice. Even wounds of the heart are not instantly fatal; though there is no instance in the human species of a recovery from such a wound.

"A case," says Mr. Dunlop, "was tried in Glasgow, in the year 1819, of which the following is an outline:—

"The keeper of a house of bad fame, in Greenock, was indicted for the murder of a sailor, by shooting him through the chest. It appeared from the evidence of the medical witnesses, that the auricles and part of the aorta, next the heart, were shattered to atoms by the slugs and brass-nails with which the piece was charged, and in their opinion he must have dropped down dead the moment he received the shot; therefore, as the body was found in the street, and the door of the house was eighteen feet up an entry, it followed that the prisoner must have run after him into the street, and there shot him. For the prisoner, it was urged and proved, that he had shot him through the door of his own house, which he was attempting to enter by force; and besides direct testimony to this effect, from those within the house, and from a lad who was along with the deceased at the time, it came out in evidence, that there was a stream of blood from the door of the house to the spot where the body was found, which could not have run from the body towards the house, as the threshold of the door was on a higher level than the pavement of the street.

On this evidence, the prisoner got a unanimous verdict of acquittal.

"By the practice," he observes, "of the Scotch courts, if one man kills another by a blow on the stomach, the fact of his having done so is construed into malice, or what amounts to the same thing, *recklessness*, as it is termed."

A very slight injury, also, of the intestines may occasion death. Even the omentum, if long protuded, will inflame and become gangrenous.

"A strong illustration of this fact," observes Mr. Dunlop, "was related to me by a medical friend. A peon, or messenger, was brought to him in India, who had received a stab in the side three weeks before, through the wound of which the omentum had all that time protruded. On examination, he found that the viscera were adhering to the wound all round, and that inflammation had commenced without, and been communicated to the interior of the cavity. Gangrene supervened, of which he died in a few days after."

When persons have been killed by falling from a great height, the liver frequently is lacerated; and this, Mr. Dunlop remarks, was the case in every one of three soldiers, who were killed by a fall from the rock of Edinburgh castle.

Wounds of the kidney have been recovered from by proper management.

"There are instances," however, "of death arising from slight blows on the kidney, where it contains a calculus. A gentleman in India was tried for the murder of his servant, whom he killed by a blow on the loins; on it being proved that the kidney contained a calculus, the ragged points of which had punctured the blood-vessels, he was acquitted."

Effusions of bile, urine, faeces, and chyle, prove uniformly mortal. They

"Are highly irritating in their nature; and though, which is very doubtful, we were enabled to remove them from the cavity, we should find it impossible to command the wounded gall-bladder, biliary duct, kidney, ureter, or intestine, from which they proceed, so that the operation would only be inflicting pain, without any rational hope of success, as they would be renewed as fast as they were removed; and as for blood, unless the puncture was made instantly, it would most likely coagulate, and in that form it would be impossible to get it through a small punctured hole; making a large incision is, of course, quite out of the question; and blood, if like to find its way out at all, will do so by the hole through which the wound was inflicted."

Death may ensue after a wound has been inflicted, from mis-management, or from previous depravity of constitution.

"There was," says Mr. Dunlop, "a very interesting case came on before the Justiciary Court, during the autumn circuit, at Glasgow, in the year 1822. A man of the name of Pace, game keeper to Lord Blantyre, was tried for the murder of a poacher, whom he shot so severely in the left arm, that it was found necessary to amputate it above the elbow. The man died of erysipelas phlegmonoides in the right leg, and the question on the trial was, whether the erysipelas was brought on by the wound or not. Upon this question the medical men differed totally. Mr. John Burns, the most eminent surgeon in Glasgow, gave it as his opinion, that the debility caused by the wound brought on the disease of which he died. Dr. John Thompson, of Edinburgh, was of opinion, that it was brought on long before he received the wound. It appeared in evidence, that the poacher had been out in the exercise of his vocation for two nights, and had slept without shelter; that during that time he had eat but little; and, above all, that he had a foul ulcer in his leg, the absorption from which undoubtedly laid the foundation of the disease before the injury was received. Under all these circumstances, what would have been the best mode of treatment in such a case, supposing he had received no wound at all? Undoubtedly, the very treatment he did receive in consequence of it—copious bleeding, light diet, being kept quiet and still; and the counter irritation of the amputation, so far from increasing the inflammation which was going on in the groin, must have acted like a blister, or a seton, in repressing and counteracting it. This appears to me to be the rational view of the case, and in this view the jury saw it, for the prisoner was acquitted."

From the mismanagement of a luxation, a person may become lame for life.

"There was," says the Editor, "a case of this kind recorded some time ago in the newspapers, where the plaintiff, a gentleman, who had been upset in a coach, recovered 800*l.* damages against the defendant, a surgeon, for unskilful treatment of a dislocation of the shoulder-joint, by which the plaintiff was partially deprived of the use of his right arm. In all similar cases, almost a similar verdict would be just; for though there may be exceptions, yet, generally speaking, permanent lameness, after a luxation (unless from disease of the bone ankyloses have taken place after it is put in its

proper position) may be fairly attributed to mismanagement on the part of the surgeon."

But were such an accident to prove fatal, it would, very probably, be owing to a bad habit of body, or to the pre-existence of some irritating disease.

On the tests of arsenic, we think it right to extract the whole of Mr. Dunlop's note, as it shows that the subject by no means rests on such a sure foundation as many persons have imagined.

"Dr. Christison, Professor of Medical Jurisprudence in the University of Edinburgh, has published, in the Edinburgh Medical Journal, for July, 1824, a very erudite paper on the detection of minute quantities of arsenic in mixed fluids, and has scrutinized all that has been said on the subject with great minuteness. The paper is so closely reasoned, that it cannot be easily abridged; but when we find Dr. Christison asserting, that 'the more compound mixtures in daily use, as articles of food or drink, affect the precipitates so much as to render the liquid tests absolutely useless'; and 'that the very same precipitates are often produced in these composite fluids, whether arsenic be present or not'; and again, 'that some of the tests will indicate arsenic where none exists, while others will fail to detect it where it does exist; nay, that a person who follows faithfully one of the processes recommended, may, in some circumstances, fail altogether to discover the poison, where it is, nevertheless, present in considerable quantity'; a practitioner would be certainly culpable in giving such evidence as might bring a panel's life into danger, without minutely weighing these objections of Dr. Christison, and without repeating the experiments upon which they are founded.

"Dr. Christison prefers the test of metallic reduction, after producing a precipitate by means of sulphurated hydrogen gas, as he thinks he has proved that neither of the tests proposed by Mr. Hume, Long-acre, viz. the ammoniacal sulphate of copper, nor the ammoniacal nitrate of silver, 'is of any use in the greater number of vegetable and animal fluids,' p. 78.—because they precipitate so much animal or vegetable matter with the arsenic.

"Medico-legal authors," says Dr. Christison, "have recently manifested a propensity to underrate the force of evidence derived from the reduction of arsenic." Dr. Smith, in particular, p. 104, says, 'Perhaps all that the majority of medical practitioners could swear to, would be, that some metallic substance was incrusted on the glass.' Dr. Christison

thinks it almost impossible to mistake in this case, as mercury sublimes in sparse white globules—zinc requires a full white heat to sublime it—tellurium, potassium, and cadmium, besides being very different in appearance, are of too rare occurrence to enter into our consideration; and antimony and bismuth cannot be sublimed by the process for reducing arsenic."

We have thus extracted, for the consideration of our readers, a fair sample of Mr. Dunlop's labours. His notes are certainly creditable to his industry; but it was no easy matter to write a Commentary on the work of so distinguished an author as Professor Beck, who has concentrated in himself the medico-forensic wisdom of the present, and of every preceding age.

III.

From the Edinburgh Medical and Surgical Journal.

Practical Remarks on Laceration of the Uterus and Vagina, with Cases. By THOMAS M'KEEVER, late Assistant to the Dublin Lying-in Hospital.

This little tract contains a good deal of interesting information on a formidable accident, to which the uterus and vagina, in cases of difficult or complicated labour, are liable, and should be carefully studied by every obstetric practitioner who wishes to know and guard against the perplexing and dangerous emergencies of his art. The subject is lacerations of the uterus and vagina, an accident to which more attention has been recently given, from the circumstance, that, though too often fatal, instances of recovery are not only not unknown, but appear to be more within the compass of the efforts of nature, than an *a priori* knowledge of the parts concerned in the injury would lead us to expect.

Dr. M'Keever commences with observations on the circumstances which dispose to this accident, or which act as predisponent causes to rupture or laceration of the womb; and infers from sundry observations, that though it may occur in females of every rank or condition, it is much more frequently found among those of inferior class. Thus, of 8,600 patients delivered in the Lying-in Hospital of Dublin, during the years 1819-20, and 1821, twenty cases of ruptured womb occurred, giving a proportion of one in four hundred and thirty cases. Mr. Burns of Glasgow states, that rupture takes place once in 940 cases; while it is infinitely less frequent in

the practice of eminent accoucheurs, attending chiefly ladies in the higher and middling ranks of society. Dr. Willan, for instance, in a note prefixed to his reports of the Diseases of London, states, that an eminent physician, in attending 2982 ladies, from the year 1776 to 1800 inclusive, lost thirty patients, one of whom only died in consequence of laceration of the womb ; and Dr. M'Keever is inclined, from conversation with several experienced practitioners in Dublin, to conclude, that this is a fair average proportion among females of the upper ranks of society in general. The author proceeds to assign reasons for this disparity of proportion, of which we take no notice, because we are not certain that the fact is established with sufficient precision.

Another circumstance to which Dr. M'Keever is inclined to ascribe considerable influence as a cause of laceration of the womb, is the sex of the infant. Thus, of the twenty cases already mentioned, as having occurred during three years, in the Dublin Lying-in Hospital, while only five women were delivered of girls, fifteen were delivered of boys,—a disparity which our author ascribes to the greater average circumference of the head of the male infant, as determined by the measurements of Dr. Clarke. This eminent accoucheur, it is well known, having measured the heads of sixty male, and an equal number of female children, born at the natural period, found the average circumference in the former to be fourteen inches, while in the female it was only thirteen and five-eighth inches ; and the arch, from ear to ear over the crown, seven inches and one-fourth in the male infants, and only seven and one-fifth in the females. As a further proof of the greater probability of this accident occurring in a male than in a female birth, Dr. M'Keever remarks, that of 120 infants examined by the same physician, the circumference of the head exceeded fourteen inches and a half in six only, all of whom were males.

These preliminary remarks are followed by a description of the symptoms which take place when the womb is ruptured. Our readers will perhaps be pleased to see them in the words of the author, which are in general clear and accurate, though occasionally interrupted by digressions which we take the liberty of retrenching entirely.

"The patient, who, in all probability, has had a succession of tedious and of difficult labours, after encountering for many hours, perhaps for days together, sufferings of the most acute and harrassing description, and at a time when her anxious friends and attendants are impatiently looking forward to the

happy moment which is to free her from her misery, and render her a joyful parent, is suddenly attacked with an agonizing, crampish pain, referable to some particular spot in the abdomen ; during the intensity of which she exclaims, that something has given way within her ; she becomes sick, vomits a little, and complains of the child having risen to her stomach. Her pains cease, or are altered ; she looks pale and ghastly, her countenance expressing great mental and bodily distress ; she writhes and twists, with the severity of her torture, the hand being applied to that part which she describes as the principal seat of it ; she sighs often ; complains of stitches about the heart ; gazes wildly and anxiously about her ; has embarrassed breathing ; and desires to be raised up in bed.

" When these symptoms are present, the experienced practitioner will feel but little hesitation in deciding on the nature of the case ; but if, in addition, we find that there has been some haemorrhage from the vagina, that the presenting part has receded, that the abdomen has become so exquisitely tender as to render the slightest pressure intolerable, having, at the same time become more prominent, and of an irregular shape, and that some projecting part of the infant can be distinguished immediately under its parietes, the case no longer admits of the possibility of doubt."

In other instances, the symptoms are less obvious, or are disguised by some peculiar circumstances.

" Thus, where the head is low down, firmly impacted in the pelvis, and that the injury is confined to the muscular substance of the uterus, its peritoneal covering continuing entire, we are deprived of several of the leading marks. In the first place, there will be no haemorrhage *externally*, in consequence of the vagina being blocked up ; secondly, there will be no receding of the presenting part ; and, lastly, we will be unable accurately to distinguish any part of the infant immediately under the abdominal parietes.

" I have said, that the labour pains either cease altogether, or become altered in character, from the time of the accident. In many cases, however, they continue to recur with tolerable regularity, at least until such time as the uterus has got completely shut of its contents ; and on more than one occasion I have known the action of the uterus to return with sufficient force to effect the expulsion of the child through the natural passages."

The doubt attending some instances of this accident, and

the difficulty of ascertaining whether it has occurred or not, will be understood by the following observations.

"Some practitioners lay great stress on the shape and feel of the abdomen, in a case of ruptured uterus. Unless, however, when viewed in connexion with other symptoms, I am inclined to think, that much reliance cannot be placed on either circumstance. Thus, the external form of the abdomen will vary considerably, according to the size of the woman, her degree of corpulency, the number of children she may have had ; or that the uterus should happen to contain at the time, and a variety of circumstances. Besides, that in those cases where the peritoneal covering of the uterus and vagina has escaped laceration, the abdomen will continue to preserve nearly the same external configuration which it had prior to the accident. And with regard to the feel of the parts, we know that, on some occasions, the uterus has been found of so thin a texture, that the sutures of the infant's head could be readily traced through the abdominal parietes.

"Neither can the feeling of pain on pressure be altogether depended on. In some instances I have known the patient make little or no complaint when the hand was applied over the surface of the abdomen ; besides that, in many cases of tedious labour, particularly where there has been strong uterine action, with but little interruption, for several hours, pressure over the uterus, or indeed on any part of the abdominal parietes, will not unfrequently occasion very considerable distress. Yet such patients have been afterwards delivered naturally, and have recovered without a single unpleasant symptom."

Ambiguity of pathognomonic signs, however, is not confined to the local symptoms only ; for even the womb may be ruptured extensively, without giving rise, for many hours, to those constitutional complaints which have been supposed to attend its presence ; or the constitutional signs may be so moderate, as for several days to throw the medical attendant entirely off his guard. Dr. M'Keever relates an instance of the accident occurring in the person of "a florid, corpulent housekeeper, accustomed to live well and exercise but little,—after being in labour upwards of thirty hours." When visited by our author, about two hours after the accident, "her countenance was natural ; her pulse but little disturbed ; she had no vomiting ; no difficulty of breathing ; and, in short, was to all appearance so well, that it was with considerable difficulty he could be permitted to make an examination. On introducing the hand, however, he found the *fœtus* and *secundum*,

dines had escaped among the bowels, through an extensive transverse rent in the cervix uteri, opposite the projection of the sacrum." The woman died about forty hours after the accident.

Our readers will naturally be desirous to know something of the anatomical characters of this injury, or species of injury, which is so formidable in its consequences; and, at the same time, on some occasions, so indistinctly marked.—Though Dr. M'Keever has given no separate section on this subject, the peculiar changes may be, without much difficulty, collected from the reports of several dissections which he has recorded; and we shall not scruple to bring the substance of this very shortly before our readers.

In the first fatal instance that is recorded, the uterus was found ruptured at the posterior part, near its junction with the vagina. The rent was concealed for some time by a layer of coagulated blood, which was spread over the edges; about a noggan of bloody serum was effused into the abdomen, the viscera of which bore marks of inflammation.

In the second instance of the same kind, a sloughy aperture, about the size of a shilling, was discovered in the left side of the uterus, one inch above the *os tincæ*, and which was found to communicate with an extensive coagulum, effused between the layers of the broad ligament. There was no effusion into the cavity of the abdomen, and the viscera were free from inflammation.

In the next case in which dissection was permitted, the seventh fatal case, an extensive laceration, with ragged, unhealthy edges, was found to have taken place at the posterior part of the vagina, near its junction with the uterus, and a considerable quantity of fluid blood was found in the abdomen. The viscera and peritoneum were highly inflamed, and the intestines in many places glued together, by patches of coagulable lymph. The body of the womb was as much contracted as it usually is at so early a period after delivery, and appeared to be perfectly healthy.

In the fourth case, the tenth of the list, the eighth fatal one, nearly a pint of bloody serum, mixed with coagula, was found effused among the viscera, which, however, were healthy; and an extensive transverse rent, with livid irregular edges, was discovered in the anterior part of the cervix, extending nearly two-thirds round, through which the shoulders and back of the child were protruded, the head having remained stationary in the pelvis, which was sufficiently capacious.

In a fifth case, the eleventh of the list, in which the patient died undelivered, the gravid womb appeared quite entire before ; but on turning down the fundus over the pubes, a large transverse rent was discovered opposite to the promontory of the sacrum, which formed, with the last lumbar vertebra, a very acute, well-defined angle. On removing a large clot of blood which obscured the laceration, the belly of the child, with a loop of the cord, were found pressing through its lips. The viscera were healthy, though lying principally on the right side ; some blood was effused, but not sufficient to account for death. The placenta, attached to the upper extremity of the womb by a sort of thin jelly, was readily detached, leaving several bloody clots on the denuded surface. A portion of the womb, to which the placenta adhered, being cut out, did not appear more vascular, nor with thicker edges, than any other part of the organ. The pelvis measured, from the sacrum to the pubes, not more than three inches and a quarter, and appeared to be much contracted in every direction.

In a sixth case, the twelfth of the list, the body of the womb, which was firmly contracted and healthy in appearance, was nearly altogether separated from the vagina, being merely retained by a slender shred on the left side ; the edges of the laceration were ragged, and had a bruised, livid appearance.

In the last case detailed by Dr. M'Keever, the womb was ruptured at the fundus, in a direction from before backwards. The child was found in the cavity of the abdomen, with the head resting on the right ilium, and the breech lodged under the liver. The peritoneum, through its whole extent, was much inflamed ; and the viscera, particularly the jejunum, ilium, and right extremity of the colon, were covered with shreds of soft lymph, which were readily removed by the finger. Large masses of coagulated blood, with about a quart of bloody serum, were effused among the bowels. The rent through which the infant had escaped, was so much contracted as barely to admit two fingers. Pelvis capacious and well-formed.

To these may be added two cases related by the author in his account of the symptoms, in the first of which he recognised, at the posterior and upper part of the vagina, a large transverse rent, communicating freely with the abdominal cavity ; and, in the second, a transverse rent in the cervix, opposite the projection of the sacrum.

From these reports, we are enabled to form a pretty exact

idea of the nature and the most common situation of this accident. It appears that the neck of the womb is the part most frequently ruptured, and that the rent or laceration is generally in the transverse direction. Next to this situation, the upper extremity of the vagina may give way, or the breach may take place in such manner that the womb shall be nearly or completely separated from its tubular outlet. In the above fatal cases, it appears that three were examples of rupture at the cervix, near the *os tincæ*, or junction with the vagina; two were ruptures of the posterior part of the cervix, opposite the sacrol promontory; two were lacerations of the upper and posterior part of the vagina; and in one the rent round the cervix or *os tincæ* was so complete as to separate the womb from the vagina, except at a single point. In one case only was the rent situate at the fundus of the organ;—and in all of them its body was entire.

The same conclusions may be derived from the cases, favourable or fatal, in which the injury was recognised by mere examination during life. Thus in the second case, which terminated in recovery, the rent was in the anterior part of the cervix, and was so extensive that the abdominal viscera could be distinctly felt through it; in the fifth and seventh, the laceration, which was extensive in both cases, was also in the cervix; and in the eighth, its anterior part was torn by a rent so large, that the infant had escaped into the abdominal cavity. In the first case, which was remarkable for recovery after mortification and discharge of a considerable portion of intestine, the laceration was very high in the posterior part of the vagina, and extending round to the neck of the bladder, communicated freely with that viscus.

We have also remarked, as a deduction from these dissections, that the direction of the rent is generally transverse, or extending round the neck of the womb more or less, sometimes so completely as to detach the organ, as in one or two instances already noticed (Case 5th and 12th,) from the canal of the vagina. In one case only was the rent in the antero-posterior direction.

The rent invariably occupies the whole substance of the womb, from its mucous to its peritoneal coat, and, in general, all the tissues appear to give way at the same time. Dr. M'Keever has noticed the case recorded by Dr. John Clarke, in the 3d Volume of the Transactions for the Improvement of Medical and Surgical Knowledge, in which the womb and vagina were quite sound, but between forty and fifty transverse lacerations of the peritoneal covering only of its

posterior surface were discovered. A case of this description shows the liability of the peritoneum to rupture, when unusually distended, and might lead to the conclusion, that this membrane, where it envelops the womb, would give way before the uterine substance itself, under the operation of such a cause. From what we have already said, however, regarding the ordinary situation of the uterine rupture, we think it may be justly inferred, that they differ considerably in this respect ; and that, though the peritoneum is liable to crack above, where it undergoes extreme distension during the latter months of pregnancy, it is chiefly the circumstance of the dense, unyielding, and contractile structure of the neck of the womb, that renders it peculiarly liable to give way. Though the *os tincæ* is so constructed that it may be dilated at the period of delivery, its structure is so close and firm, that it does not readily yield to a distending force. At the same time, the uterine substance immediately above this is, during the process of parturition, the seat of alternate dilatation and violent contraction ; and if the former is too great, or the latter too violent and somewhat irregular, rupture in the transverse direction appears almost a natural result ; and it will depend much on the stage of labour, whether this rupture takes place above or below the *os tincæ*,—in the cervix of the womb, or at the upper extremity of the vagina.

The effects of rupture of the womb may be easily understood, from what we have already laid before our readers of the reports. Perhaps the laceration never acquires its greatest extent at the very first, and it is probable that, in many cases, it is small ; but when once begun, extends as the uterine efforts go on. Bleeding from the edges of the laceration is an invariable consequence ; and, in general, a quantity of blood is discharged from the vagina at the moment of rupture. A more formidable and unpleasant result is the escape of blood into the abdominal cavity, where it may, and sometimes does, occasion peritoneal inflammation. The blood, after some time, generally coagulates on the edges of the rent, while the serum trickles down into the peritoneal cavity between the womb and intestines. This is the source of the bloody serum noticed so often by our author in his autopic reports.

In some instances the child, or a part of its person, may be thrust through the rent into the cavity of the abdomen ; and in others, a large portion of intestine may escape into the uterus or vagina. The former result had taken place in the eighth, tenth, eleventh, and thirteen cases given by the author;

and in one which he relates at page 14th, in his account of symptoms. The latter occurred in one case only, the first; but the viscera were felt distinctly in the second. If intestine escapes, it generally, as might be anticipated, becomes strangulated between the lips of the rent, and then gives rise to the usual symptoms of strangulated hernia. This result was first noticed, according to our author, by Dr. Labatt of Dublin, in his paper on Ruptures of the Uterus, in the Dublin Medical and Physical Essays.

"The Doctor's attention was first directed to this very important point, in consequence of having observed, that, in several instances of lacerated uterus, the patients were affected with symptoms very similar to those that occur in cases of strangulated hernia. And this view of the matter was shortly after fully confirmed by an interesting dissection of which he received an account from a practitioner residing in Clonmel, where, on examination after death, a loop of intestine was found in a strangulated condition between the lips of the wound. A similar circumstance, I may observe, occurred in a case communicated by M. Percy to the Academy of Surgery, in Paris—"The hernia was not discovered until the opening of the body, the wound in which it was strangulated being scarcely discernible, though it had been prodigiously large before the contraction of the uterus."

Though the probability of death after such an injury as rupture of the womb may appear sufficiently manifest, and so natural as neither to be questioned nor explained, yet it is not easy to name the exact lesion which is to be regarded as fatal, unless it be mere rupture of the organ itself. Yet the womb has been cut and torn, and the patient recovered; and in some instances recovery, as we shall notice, has taken place after the very injury of which we treat.

"The cause of death," says Dr. M'Keever, "in ruptures of the uterus, it would in many cases be difficult to explain. The quantity of blood found effused among the viscera rarely exceeds what a woman would lose after a natural delivery, and that with a sudden gush. The fact is, the blood extravasated on those occasions consists for the most part of that which had circulated through the impregnated uterus, a loss the woman can in most instances bear with impunity. After this has escaped, I believe the lips of the wound yield hardly any blood. By some writers the inflammation of the peritoneum has been supposed to occasion death, but, in several instances, on dissection, the abdominal viscera and peritonæum were found perfectly healthy, besides that the patient often

sinks before this formidable disease has had time to set in. I recollect, on one occasion, the woman expiring instantly on the uterus giving way, although not more than a naggin of blood was lost, and the bowels were found altogether free from morbid appearance."

After this testimony, it would be impertinent to attempt any explanation, or to assign any cause which, more than another, could produce the fatal issue. We shall therefore wait with patience, though not without eagerness, for a sufficient number of cases to determine what are the circumstances which favour recovery, and what are those which render this impossible.

We come now to notice, that Dr. M'Keever has related two cases in which life was preserved, and recovery eventually effected, though in one the circumstances were particularly unsavourable. In this case, the account of which was first published in the *Transactions of the Association of Physicians*, the upper and posterior part of the vagina was ruptured, and a portion of intestine, about six or eight inches, at first escaped through the wound. The woman herself, supposing this to be a portion of the membranes, merely contented herself with passing a slip of cloth through the loop which it formed in its descent. In the course of the fourth day after, as the supposed membrane showed no tendency to come away spontaneously, one of the female attendants attempted its removal, at first gently, but afterwards with increasing force, till the sufferings of the patient compelled her to desist. These remorseless proceedings were quickly followed by all the symptoms of the most severe intestinal inflammation; and two days after, when Dr. M'Keever first saw the woman, he found, in place of the alleged portion of membrane, near a yard and a half of bowel coiled up under her, black and gangrenous, while the cylinder of the intestine was so incomplete, that the finger could be freely passed up and down through the rents. Nothing was attempted but palliative measures; and in three days more, Dr. M'Keever found that the mortified portion of intestine had come away in the course of the previous night, after which the urgent and distressing symptoms had almost disappeared. This woman eventually recovered, though the excrements were discharged by an artificial anus in the vagina for about two years, when the natural passage was reopened; and the discharge by the vagina being gradually diminished for four or five months, the stools followed the natural route entirely; and even pregnancy again took place, and materially contributed to this favourable result. The

case is instructive, and will be perused with great interest, not only by practitioners of the obstetric art, but by those who wish to understand how much injury may be inflicted on the alimentary canal without proving fatal or injurious to life, and what extensive powers of accommodation the animal body possesses. We can make room for the following conclusions only, as they are stated by our author, without pledging our faith for their legitimacy.

"First. That a case of lacerated vagina, even though it be accompanied with a rupture of the bladder, together with the loss of a considerable portion of intestine, cannot be considered as a necessarily fatal consequence.

"Second. That life may be prolonged, and the system be properly nourished, notwithstanding the loss of nearly four feet of the *small* intestine.

"Third. That in such a case, the loss of absorbent surface is compensated for by an increased demand for food, as also by the patient selecting those articles of diet which afford most nutriment in a given bulk.

"Fourth. That, notwithstanding the increased desire for food, less nutriment is taken at any one time; a kind of continued sympathy appearing to be established between the stomach and small intestine, in consequence of which the supply is proportioned to the diminished extent of surface afforded for absorption.

"Fifth. That aliments pass from the stomach, not in the order of their admission into that cavity, but according to their greater or lesser nutritability; those substances that afford least nutrition passing first, while those which afford most are retained a longer time.

"Sixth. That fat may be deposited in considerable quantity under the integuments of the body, although the large intestine, which has been supposed to be the laboratory where this substance is formed, has been in a state of complete inactivity.

"Seventh. From the length of time the feces were retained in the large intestine, it affords a striking and convincing proof that they do not consist, as has been supposed, of the residue of our food in a state approaching to putrefaction; but that so long as they are retained in the body, the vital changes which they undergo preserve them from decomposition.

"Eighth. That an artificial anus, not the consequence of a strangulated hernia, may become completely obliterated, and the feces resume their natural healthy track.

Ninth. That the changes naturally consequent on gestation and parturition, so far from interfering with the process of obliteration, appear rather to accelerate its progress."

It may be objected to the first case, that though an instance of severe and trying lesion to the intestinal canal, it was properly an example merely of rupture of the vagina, and that it cannot, therefore, with justice, furnish conclusions regarding the sanability of laceration or rupture of the womb. The second case is an answer to this objection. The rent, which was considerable, was situate in the anterior part of the cervix, and the bowels were distinctly felt through it. The injury appears to have taken place on the 11th September, 1821; on the 16th the patient was free from pain; on the 17th the milk began to flow; and though there was a copious purulent discharge from the vagina, she was in every respect convalescent; and in ten days more she was discharged free of ailment. The treatment was a combination of the antiphlogistic and sedative plan. We may here add, that in the 12th volume of the Medico-Chirurgical Transactions of London, published some months ago, Mr. Powel has related a similar case of rupture of the cervix, in which, though the patient was much exhausted during the delivery, which was effected by turning and then perforating the head, recovery eventually took place.

The practical measures to be pursued in the case of rupture of the womb, Dr. M'Keever has investigated shortly, but with much judgment and good sense; and his opinions on the mode of treatment to be adopted are rational. He begins with considering the question of immediate delivery; and we entirely agree with him in saying, that we cannot comprehend, what objection can be urged against this measure in the event of rupture. The injury itself, sufficiently likely to terminate the existence of the patient, will undoubtedly be aggravated by leaving the woman undelivered. The infant is to a moral certainty dead; the action of the womb to expel this lifeless mass, is, perhaps, every moment enlarging the rupture; blood is flowing from its edges, and at once exhausting the patient, already much weakened, and acting as a source of local irritation, by getting into the peritoneum; and to complete this list of dreadful consequences, either the child is thrust into the belly among the bowels, aggravating the sufferings of the patient to an incredible degree, or the bowels themselves are protruded into the wound, and strangulated between its edges during the efforts of uterine contraction. Under such circumstances, immediate delivery gives the only chance either of alleviating present sufferings, or of

promoting eventual recovery ; and, in short, in every view of the case, delay is not only dangerous, but renders the patient's destruction every moment more inevitable. Our author justly remarks, that the expectation of a large lacerated wound, the most difficult of any to be healed, uniting under such unfavourable circumstances, besides being inconsistent with the established laws of the animal economy, is in direct opposition to the result of experience and the dictates of common sense."

Nor are we to be guided in the choice of our practical measures, by the result of cases intended to prove, that a female who has suffered rupture of the womb may not only recover from the immediate effects, but even may again become pregnant, and have a favourable delivery, though she may have discharged her lifeless and putrid mass piecemeal through various outlets. Such instances, our author has justly remarked, though they serve to show the extraordinary powers of nature, and the singular resources of the human body, can never be made the standard for the formation of rules of practice.

The analogy of extra-uterine conception, which has been maintained by some to be an argument for deferring delivery, is equally inapplicable.

" In the first place, a woman in this situation carries about her, at least until the termination of the ordinary duration of pregnancy, not a putrid, lifeless mass, but a living infant, with a smooth investing membrane. Secondly, the viscera of the abdomen are slowly and gradually habituated to the presence of the foreign body. And, lastly, the case is not complicated with a serious and alarming injury ; consequently the powers of the constitution are, as it were, centred in one simple, undivided effort, either that of getting shut of the foetus altogether by various outlets, or of enclosing it in a crustaceous covering, by which its decomposition is retarded, or altogether prevented."

In one case only does our author admit that there can be any doubt or question about the propriety of immediate delivery ; and this is when rupture takes place, and the infant escapes among the bowels, previous to the dilatation of the mouth of the womb and external parts.

" Should we, in such a case, persevere in our efforts to dilate the os uteri, and thus deliver by the natural passages, or would we afford the patient a better chance of surviving the accident, by cutting through the parietes of the abdomen, and extract the infant by what has been termed, the spurious

Cæsarian Section ;—this is undoubtedly a point of much difficulty, and one that requires the most natural and serious deliberation ; at the same time I may observe, that the general impression amongst the most intelligent physicians and surgeons in this city, is decidedly in favour of the latter proposal. And indeed when we take it into account, the dangers attendant on a forcible dilatation of the passages, such a preference must at once appear both rational and just. “ To dilate the os uteri forcibly,” observes Mr. Burns, “ and thus to extract the child, is a proposal so rash and so hazardous, that I know of none in the present day who would adopt it. Instances have occurred, in fact, in which the whole body of the Uterus has been torn from the vagina by violent attempts at dilatation. Such, it is likely, was the cause of death in many of the cases alluded to by Peu and Mauriceau, although these writers do not appear to have been altogether aware of the circumstance. The former, in his *Pratique des Accouchemens*, tells us, “ that the patient must inevitably perish, if much force has been employed in the dilatation of the Uterus;” and the latter, in his 49th Aphorism, informs us, “ that in those cases of uterine haemorrhage where it becomes necessary to hasten delivery for the purpose of saving the woman’s life, and that on examination the os uteri is found *thick* and *rigid*, the patient will in general die ; but that if we find it thin and dilatable, she will have a better chance of recovery.” —Now it is, I conceive, by no means improbable that in several of these cases the patients died, not from the mere loss of blood, but in consequence of the violence done to the uterus. It is obvious, from the rigid unyielding state of the passages described by Mauriceau in this Aphorism, that there must have existed considerable contractile power in the uterus, a circumstance which would, in the majority of instances, have prevented the haemorrhage proceeding to such an extent as to endanger the life of the patient.

“ Further I may remark, there are a few well authenticated cases on record, where the expedient of cutting into the abdomen has been attended with the most satisfactory result ; whereas there is no instance whatever of recovery after a violent and forcible dilatation of the passages.”

There is, however, no room for hesitation, when the head of the infant remains impacted in the pelvis after the occurrence of this accident. In such a case, the forceps or perforator is to be employed as circumstances may require. In the majority of instances, the crochet will not only answer the purpose, but will be the most eligible instrument. The cir-

cumstances which require the use of the perforator will be determined by the nature of the case.

The merely medical treatment is very simple.

"The after treatment consists for the most part in endeavouring to allay vomiting by means of the saline effervescent mixture, combined with small doses of the tincture of opium; in attending to the state of the abdomen, arresting the progress of inflammation by means of general blood-letting, or, what will in most instances be found to answer better, by the application of thirty or forty leeches to the belly; and lastly, in endeavouring to support the patient's strength by mild, nourishing diet."

A few brief observations on portending or premonitory symptoms, may be said to form the conclusion. It is needless to say any thing of them, further than that they merit the perusal of the studious reader, and the diligent practitioner.

MONTHLY SUMMARY

OF PRACTICAL MEDICINE.

I. ANATOMY AND PHYSIOLOGY.

MM. BRESCHET & EDWARDS on the Mode of Action of the Pneumo-gastric Nerves, in the production of the Phenomena of Digestion.

These physiologists have published an interesting memoir on this subject: and its interest is not the less that it shews, by well-conducted comparative experiments, the justness of the deductions already drawn by *rational* physiologists, from the experiments which were previously made on the subject; and evinces the correctness of the inferences deduced by them as to the relations of the galvanic influence with nervous and vital actions.

Our limits admit not of the insertion of more of this memoir than the conclusions which MM. Breschet and Edwards have drawn, with apparent accuracy, from the comparative experiments made by them.

* 1st. That the division of the nerves of the eighth pair

considerably retards the transformation of the aliments into chyme, without arresting it.

'2d. That this retardation of the digestive process depends upon deficient action of the muscular fibres of the stomach.

'3d. That the vomitings which often follow the section of these nerves are owing to paralysis of the muscular fibres of the œsophagus.

'4th. That the re-establishment of the digestive process, after the division of these nerves, by means of electricity or galvanism, depends not upon the chemical action of this agent, but is owing to its exciting the movements of the muscular coats of the stomach necessary to the renewal of the surface of the alimentary bolus, and to the placing successively all the parts composing it in contact with the parietes of this viscus.

'5th. That, by means of a mechanical irritation of the inferior extremity of the divided nerve, similar effects to those produced by galvanism are occasioned, but somewhat less marked.

'6th. Finally, that the chief function of the pneumogastric nerves, considered only as forming a part of the digestive apparatus, is to preside over the movements of the stomach—movements which accelerate digestion, by facilitating the contact of the gastric juice with the different parts of the alimentary bolus.'—*London Medical Repository.*

M. SERRES on *loss of the Functions of the Organs of Sense from Disease of the Trigeminus.*

To Mr. C. Bell we are indebted for having first investigated the functions of the different parts of the fifth pair of nerves, by means of dissections of living animals. M. Magendie followed his example, and divided the trigeminal nerves in situations nearer the cerebrum. The following case, recorded by M. Serres, confirms the inferences which these experiments seem to warrant :—

A young man, an epileptic patient in the hospital *La Pitié*, died, on the 12th of August last, after having been under the care of M. Serres for ten or eleven months. When he was admitted into the hospital, he complained, in addition to his epileptic seizures, of slight inflammation of the right eye.—The inflammation increased, the cornea became opaque, and

sight, at first disordered, was ultimately lost in it. The other senses of the right side became also successively paralysed.—This took place in June, 1824. The eye, eyelid, nostril, and one half of the tongue, of the right side, were deprived of sensation, whilst these parts possessed it perfectly on the left. Shortly after, the disease was aggravated by a scorbutic affection, which manifested itself on the right side of both maxillæ, but the teeth were made bare, by the affection of the gums, only on the right side. Finally, at the advanced stage of the disease, complete deafness, on the same side, took place, during the first days of August.

On the 7th of this month, M. Serres detailed these facts to the Philomathic Society ; and stated that, in his opinion, a morbid state of the trigeminal nerve existed either in the ganglion or towards its insertion.

The body was inspected on the 13th by MM. Magendie, Serres, Lisfranc, Georget, and several students, when there were found—1st, a morbid condition of the ganglion of the trigeminal nerve of the right side : this ganglion was swollen, of a yellow colour, and less vascular than usual ; 2d, in the situation where the nerve is inserted in the sides of the annular protuberance, this nerve was observed to be changed into a yellow gelatinous matter, like the ganglion. This matter transmitted small processes into the substance of the protuberance, in the course of the fasciculi of the insertion of the nerve. It is also remarkable that the muscular branches of the affected side were unaltered, and that the action of mastication had never been disturbed.—*London Medical Repository.*

II. SURGERY AND MIDWIFERY.

Mr. LIZARS' Case of Gastrotomy.

In the year 1821, I was requested by my friend, Dr. Campbell, lecturer on midwifery, to visit a woman with an abdomen as large as if in the ninth month of gestation. On examination, the tumour occupied the whole abdominal cavity, and appeared to roll from side to side; the uterine per vaginam felt natural, and her catamenia had been regular, but caused excruciating pain when they occurred. She stated that she was twenty-seven years of age, had borne only one child, and in twelve months afterwards had a miscarriage; two or three months after which, towards the end of 1815,

she became sensible of a considerable enlargement of her belly, that began on the left side, and which she attributed to several blows and kicks received from a brutal husband, from whom she was now separated ; that her neighbours now abused her, and made such complaints to her employers, that they dismissed her. At that time she earned, and now earns, her livelihood by binding shoes. Being now without the means of support, she applied to a county hospital, but was in a few days dismissed, on the supposition of being with child. She then consulted a number of respectable practitioners, but all of them cruelly taunted her with being pregnant. At the end of two years, she perceived a small moveable swelling in her left groin, which she allowed to increase for twelve months, when she came to Edinburgh, and, on consulting a surgeon, he opened it with a lancet, and discharged a large quantity of matter. On examination, this was found to be a lumbar abscess, which she ascribed to a fall on her back three years previously. The evacuation of this fluid did not in the least diminish the magnitude of the abdomen ; and she imagined she could distinguish between the pain of the lumbar abscess and that of the tumour in the abdomen. She was admitted into the hospital of this place, and remained for thirteen weeks, without receiving any relief. She then consulted the chief medical gentlemen of this city, many of whom pronounced her pregnant, and all of them tried to dissuade her from an operation. Two put her under different courses of mercury ; and, after a consultation, one punctured the abdomen for dropsy of the ovary.

Before having recourse to the operation of gastrotomy, I deemed it my duty to have the opinion of the principal practitioners in this city, either by personal consultation, or by sending the patient to them. The woman herself also had previously waited on many of them. Some said, that to operate would be rash ; others, that it would kill my patient. It was agreed by all, that there was a disease of one or both ovaries ; and she had been twice tapped for dropsy of the left ovary, the result of a formal consultation of some of the ablest medical men of this city. Convinced, from the history of the disease in the records of medicine, and from gastrotomy having been successfully performed for volvulus, and from the Cæsarian section, that there was little to apprehend either from loss of blood or peritoneal inflammation, I felt desirous to relieve the woman by an operation ; but was anxious to have the sanction of some other surgeon or physician besides my friend, Dr. Campbell, who at once offered to assist

me. All whom I took to see the patient, and all to whom I sent her, said that the disease was an affection of the ovary; but all of them condemned an operation. My patient, therefore, abandoned to her gloomy condition, called on me repeatedly, urging me to try the operation, otherwise she would do it herself. At last, as her pain became perfectly intolerable, and she was still urgent, I resolved to operate. During the preceding period, I had directed my attention to the lumbar abscess, and applied caustic, eschar after eschar.

Wednesday, 24th October, 1823, was the day appointed for the operation; therefore, on the day preceding, she took a dose of the compound powder of jalap, which operated also on Wednesday morning, so as to preclude the necessity of administering an enema; she also made water immediately before, in order to empty the bladder. The emptying of the rectum by a clyster, and the drawing off the urine, or taking care that the patient makes water, are circumstances of some consequence to be attended to, in all operations of the abdominal cavity. As inflammation appears to be induced generally by exposure to cold, and as these cases succeeded so well in America, I desired the room to be heated to 80 deg. Fahrenheit. When the temperature of the room had arrived to this heat, I placed the patient on a table covered with a mattress, and two pillows supporting her head, and commenced the operation, in the presence of Dr. Campbell, Dr. Vallange, late surgeon of the 33d regiment, Mr. Bourchier, surgeon of the 36th regiment, and several other medical gentlemen, by making a longitudinal incision, parallel with, and on the left side of the linea alba, about two inches from the ensiform cartilage, to the crista of the os pubis, through the skin and cellular substance, when the peritoneum appeared, the recti muscles being separated by the distention consequent on the present disease and former pregnancy. I then made a small incision through the peritoneum, introduced a strait probe-pointed bistoury, and made a more extensive opening, into which I inserted the fore and middle fingers of the left hand, so as to direct the instrument, and to protect the viscera. With this instrument I made the internal to correspond with the external incision; while my friend, Dr. Campbell, who assisted me, endeavoured, but in vain, to confine the intestines within the abdominal parietes. Apprehensive of peritoneal inflammation, of which many said my patient would die, I enveloped the intestines in a towel dipped in water about 98 deg. I now proceeded to examine the state of the tumour, when, to my astonishment, I could find none. I next re-

quested Drs. Campbell, Vallange, and Bourchier, to make themselves satisfied that there was no tumour; when Dr. Vallange observed, that he felt a tumefaction on the left side of the pelvis. This, on investigation, was found to be a flattened tumour of no great magnitude, at the left sacro-iliac synchondrosis of the pelvis, lying beneath the division of the common iliac artery into its external and internal branches. Having satisfied all present that this was not the tumour which was anticipated—that it was impracticable to extirpate it—and that the uterus and ovaria were perfectly sound and healthy, I proceeded to return the intestines, and to stitch up the wound, carrying the needle as deep as possible, and applying straps of adhesive plaster between the stitches. Compresses of lint were next laid along, and the nine-tailed bandage bound round the body. I then carried her to bed, and gave her an anodyne draught of forty drops of laudanum, which was almost immediately rejected. Ordered her warm toast-water and tea.

When the intestines protruded, and baffled all the efforts of Dr. Campbell and the other gentlemen to confine them, I shall never forget the countenances of my pupils and the younger members of the profession. This fact of the intestines being forced out, proves, along with others, that the lungs can be expanded, although atmospheric air be admitted into the abdominal cavity; the diaphragm acted with great vigour, and with powerful impetuosity. The operation was performed at one o'clock of the day, and by seven in the evening she had vomited twice; had flying pains in the abdomen, a little hurried breathing, pulse at 100, and some thirst; she also felt uneasiness from inability to void her urine, which was drawn off by the catheter; and, as a precaution, I bled her to syncope, which occurred when eleven ounces were abstracted. She lost little or no blood during the operation.

This woman perfectly recovered. Vomiting occurred for two or three days after the operation, attended with much pain in the abdomen, and fever; but, by prompt and large bleedings, and a strict antiphlogistic plan, these symptoms were subdued, and she now gains her livelihood as usual."—*Anderson's Quarterly Journal*.

Mr. Bush's Case of Twins delivered at different times.

Mrs. Bryant, of this place, aged forty, the wife of a respect-

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able cheesemonger, being pregnant for the seventh time, experienced, about the latter end of the seventh month of gestation, rigors, pains in the back and loins, accompanied with slight red discharge from the vagina : these symptoms led us to expect premature labour. The pains became more severe on the fourth day (June 2d, 1824,) and the expulsion of a foetus took place ; the placenta almost immediately followed, and the discharge was very inconsiderable. The foetus, which was the ordinary size of one at six months, was in a state of putrescence, and must have been dead for some days at least.

After the expulsion of this child, the abdomen of the mother was hard, tumid, and, as she stated, the motion of a child in the uterus was distinctly felt ; but, as she was totally free from hemorrhage, and almost from pain, I deemed it proper to leave the case to the operation of nature. Mrs. B. was requested to remain in bed, in a state of as much repose as possible ; which she did for some days.

On the 19th of June, she became uneasy, and, after a few hours, labour came on, and a living healthy child was born ; and thus the case terminated, without the further occurrence of any thing unusual.—*Lond. Med. and Phys. Journal.*

III. PATHOLOGY AND THERAPEUTICS.

Mr. Hunter on *Diseases of Muscular Movement.*

Every practitioner must have observed the common form of chorea, so admirably described by Dr. Hamilton. But there are certain forms and modifications of the diseases, so uncommon, that many in the profession, I am persuaded, have scarcely heard of them. They are at the same time so curious that they deserve some consideration.

Frequently do we find chorea complicated with various disorders—at one time with some strange mental aberration, as in the case related by Thermier, the patient being of a deep melancholic temperament, and the limbs kept in a state of continual snatching and trepidation—at another time, with the hysterical diathesis, and receiving some strange modification from that disease. Dr. White of York, has given us a very striking example of this mixed affection, as it appeared in a lady about 42 years of age. She complained of violent pain in the right side of the face, and of universal erratic aches and soreness. There was a scorching heat all over the skin, except from the feet up to the ankles, which were as cold

as marble. Had frequently a violent pain in loins, which often shifted from hip to hip; the leg of the aching side having been so much affected with numbness, that she dragged it after her in walking. She faltered at times in speech, but this was generally of short duration. All the muscles of the body evinced in succession convulsive motions. Thus her face was first affected ; then her nose, eyelids, and head, which was thrown forcibly backwards, and often twitched from one side to the other with exquisite pain. From this quarter the convulsive action removed, first into one arm and then into the other ; after which, both legs immediately became convulsed. In this manner all the parts of the body were affected by turns. She was at all times perfectly sensible, and knew what limb was going to be attacked next, by a sensation of something running into it from the part already convulsed, which she could not describe in words "No words," says Dr. White, "can convey an adequate idea of her odd appearance ; and I do not in the least wonder, that in the times of ignorance and superstition, such diseases were ascribed to supernatural causes and the agency of demons."

In his excellent work *De Sedibus, &c.* Morgagni relates a singular species of the disease. It is known by some authors under the name of *Malleatio*, the convulsive paroxysm principally consisting of a striking of the knees with one or both hands, as with a hammer. In Morgagni's case, the convulsive movement passed on to the sound hand, if the finger of the affected one was extended, and when the motions were attempted to be arrested by force, the convulsions became both more violent and general.

A still more singular form of the disease is said to occur in some parts of the north of Scotland, and is described in the following terms. "Those affected first complain of pain in the head or lower part of the back, to which succeed convulsive fits, or fits of dancing at certain periods. During the paroxysm, they have all the appearance of madness, distorting their bodies in various ways, and leaping and springing in a surprising manner, whence the disease has derived its vulgar name, "Leaping Ague." Sometimes they run with astonishing velocity, and often over dangerous passes, to some place out of doors, which they have fixed on in their own minds, and then drop down quite exhausted. At other times, especially when confined to the house, they climb in the most singular manner. In cottages for example, they leap from the floor to what are called the baulks, or those beams by which the rafters are joined together, springing from one to another.

with the agility of a cat, or whirling round one of them with a motion resembling the fly of a jack."

A still more singular case is related by Dr. Watt. It is probably the most extraordinary of the kind on record. He calls it Periodical Jactitation. The patient was a lively girl of about 10 years of age. The disease commenced with an intolerable pain in the head, and constant inclination to keep her body in the erect posture. About a month after the commencement of the disease, she was seized with a propensity to turn round upon her feet like a top, and felt pleased and gratified when her relations attempted to increase the velocity of her movements. After a month's continuance, these motions ceased, when the headach returned with increased violence. Two months after this, a new kind of convulsive motion arose. It consisted in the patient lying across the bed, and turning round like a roller, moving in this manner rapidly from one end of the bed to the other. These motions were not confined to the patient whilst in bed. On the floor of the house, in the open air, and even in the shallow part of a river, where they tried the experiment, the motions still continued with an uninterrupted regularity. After continuing in this state for about a month, the convulsive motions assumed an entirely new appearance. The patient now lay upon her back, and, by drawing her head and heels together, bent herself up like a bow, then allowing her head and feet to separate, her buttocks fell with considerable force on her bed. She repeated the same movements twelve or fourteen times in the minute, sometimes for fourteen hours together. These motions continued for about five weeks, and were succeeded by others of a still more whimsical description. She was now seized with a propensity to stand upon her head, with her feet perpendicularly upwards ! As soon as her feet gained the perpendicular, all muscular exertion was withdrawn, and the body fell down as if dead, her knees first striking the bed, and her buttocks striking her heels. This was no sooner done, than she instantly mounted up as before, and continued to exercise herself in this manner, sometimes for fifteen hours a day, at the rate of from twelve to fifteen times in the minute.

The principle which ought to guide us in the treatment of chorea, has, I think, never been sufficiently explained. The profession is certainly much indebted to Dr. Hamilton for calling their attention to the state of the intestinal canal in this, as well as in many other disorders ; but it must be admitted, that a deranged state of the intestinal canal is only an occa-

sional exciting cause ; and, even when this cause has for some time operated, how often do we find the removal of the cause producing no apparent effect upon the disease ? Our patient was tried for a long period, we understand, with purgatives, without receiving the smallest benefit.

Tonic and alterative medicines are as frequently useful in this disease as purgatives ; and the reason probably is, that debility of an organ, or of a system of organs, is often an exciting cause, and, by raising the energy of a part, or of the whole system, the exciting cause is removed, and the parts restored to their natural and healthy function. At the same time, how frequently do we find the most powerful tonics, such as the preparations of iron, of zinc, of copper, of silver, and of arsenic, of no avail ? And when they do succeed, it is most frequently by effecting, after long and protracted courses, what I consider can be done in a few days by external applications.

Another plan of treatment is founded on the principle of allaying the irregular muscular movement by the use of anti-spasmodics and sedatives, such as musk, belladonna, foxglove, and opium ; but the disrepute into which this practice has fallen, is a manifest proof that it never has been of great or essential efficacy. The utmost, I believe, that can be said in its favour, is, that it may produce a palliative, but rarely a radical effect.

The treatment of chorea, by rubbing tartar emetic ointment into the scalp, and along the course of the vertebral column, is, so far as I know, new, and promises, did we dare to generalize from one case, to be remarkably successful.—The treatment is founded on what I consider to be sound and incontrovertible general principles, and, what is also of very great moment, the same treatment, I presume, will be found applicable to every variety of morbid muscular movement.

From the brain and spinal cord, the nervous fluid or influence, on which muscular motion is in a great measure dependent, is uncontestedly derived. The nerves are merely the conductors of this fluid. It is perfectly clear that they themselves are incapable of imparting it ; for, insulate a nerve from the brain or spinal cord, and the muscles upon which that nerve is ramified, are instantly and permanently paralyzed.—Admitting, then, the brain and spinal cord to be the fountain from which all nervous influence springs, we can find no difficulty in conceiving, how a structural or functional derangement of these parts should give rise to irregular movements of the muscular fibre. If this fluid were not duly secreted, or

were prevented from arriving at the muscles, paralysis would be the consequence : if it came forth too sparingly, or in an irregular manner, weakness and tremulous movements would be induced : or were it sent out too copiously, convulsions would be the result. In all *idiopathic* diseases of the muscular movement, we must consider the brain and spinal cord as the seat of the affection ; and the only rational method, surely, of counteracting and curing such diseases, is to recal the brain and spinal cord to their natural and healthy function.

It must be admitted, however, that the great majority of diseases of the muscular movement are *symptomatic* only, or dependent merely on some local ailment. The irritation of teething, of worms in the intestinal canal, or of a scratch or puncture on the hands or feet, will give rise both to partial and universal convulsions. In such cases, the convulsions are not dependant at first on any derangement of the brain and spinal cord, but probably on some local derangement of the conductors of the nervous influence, that is to say, of the nerves of the part. The irritation which acts upon the nerves of the part, probably modifies the quantity, or may even vitiate the quality of the nervous power ; and this morbid action, whatever it may be, once commenced, is apt to spread like almost every other morbid action, till it affect the root of the nervous system itself. It is only on such supposition, I presume, that we can account for the fact, that with the removal of the local existing cause of any convulsive disease, the convulsive movements do not always cease.

I do not wish to be understood as inculcating, that the removal of the exciting cause in the treatment of symptomatic convulsive diseases is of no avail. I consider the removal of the exciting cause as of the first importance ; but after the cause has been removed, and the convulsive movements still continue, I could wish it enforced that our attention should immediately be directed to the root of the nervous system itself. There is one grand reason which I think should induce us to attend to the state of the brain and spinal cord, even in symptomatic convulsive diseases, I mean the tendency which any irritating cause has to act upon the extreme points of any nervous chain to which it may be applied. In inflammation of the liver, the pain is felt principally in the shoulder, at the most remote point of the phrenic nerve from the seat of the disease. In calculus of the bladder, one of the most constant symptoms is an itching in the *glans penis*. Worms in the intestinal canal create, it is well known, an irritation in the lining membrane of the nostrils. The sudden application of cold

water to the surface of the body, will excite the bladder to contract and expel its contained fluid. These and other facts that might be mentioned, are all explicable on the general principle, that any irritating cause which acts upon a chain of organs connected together by nervous sympathy, the pain and danger are seated uniformly at one of the extremities of the chain, and one of the extremities cannot long be affected without the disease extending to the other also. In marasmus, for example, we find the disease commencing sometimes in the digestive, and sometimes in the assimilative organs ; but in whatever extremity of the chain the disease commences, it is generally not long ere the other extremity of the chain is also affected.

In these convulsive diseases in which the irritation is confined at first to one organ, let us suppose the stomach or uterus. These organs, then, may be considered the extreme points of a set of nerves, whose other extremities arise from the brain or spinal cord. When the irritating cause has operated for a certain period on any of these organs, the irritation is imparted by sympathy to the other extremity of the chain, that is, to the point of the brain or spinal cord from which such nerves originate ; and the irritation, when thus begun, will extend, if not counteracted, from that point over the whole root of the nervous system. This fact, I think, is beautifully exemplified by what takes place in tetanus. A man receives a scratch or puncture on the great toe. In a few hours he is affected with a spastic action of the muscles of the lower jaw. Here the irritating causes tell first upon the extremity of a long and complicated chain of nervous fibres, which, however, can be easily traced. The irritation travels first either along the course of the great sacro-sciatic, or anterior crural nerve, till it reaches the pelvis. In the pelvis numerous branches of the great sympathetic unite with these nerves. The irritation passing on then to the great sympathetic, finds its course along a continuous line of nervous matter from the pelvis to the cranium. It is well known, that the great sympathetic has a direct communication with the 5th pair ; so much so, that it is usually said to take one of its origins from that pair. The irritation, then, would pass from the great sympathetic to the 5th pair ; and according to the general law which we have already noticed, would tell more particularly upon the remote branches of that nerve ; that is to say, upon the branches which ramify upon the temporal muscle, and which afterwards pass to the crown of the head. This, it must be admitted, will only account for the spas-

modic action of the temporal muscles : How, then, do we account for the spasmodic action, in tetanus, passing one to the other muscles of the body ? After the irritation, then, has continued for some time at the extreme ramifications of the 5th pair, the same morbid irritability has a tendency to pass to its other extremity, that is, to the origin of the nerve in the brain. The brain at that point becomes affected, and the diseased action extends over the brain and spinal cord, when all the muscles of voluntary motion become influenced by the same convulsive movement. If this view of the pathology of tetanus be correct, our curative means should be principally directed, *1st*, to that part of the body where the original irritating cause acted ; *2dly*, to the muscles of the lower jaw ; and, *3dly*, to the brain and spinal marrow : and the grand curative indication, I conceive, should be, to excite a new action in the immediate neighbourhood of all these parts.

The indication of exciting a new action in the vicinity of the brain and spinal marrow, is not applicable to tetanus only, but to all diseases which consist of an irregular action of the muscular system. Let us suppose, that all such diseases may be arranged into three classes.

1st, When the muscular action is weak and tremulous.

2dly, When that action is strong and rigid. And,

3dly, When it consists of a mixture of both ; at one time weak and tremulous, and at another strong and rigid.

Some physiologists have believed, that the flow of the nervous power, in the healthy state, is in an undulatory course, with short and irregular pauses between each undulation ; while others have maintained, that it is sent forth in a continuous stream. It is unnecessary at present to inquire which of these opinions is correct, or whether either of them is well founded. It is enough for our present purpose to suppose, that when the nervous power is sent forth in smaller quantities than natural, the tonic power of the muscles cannot be permanently supported, and a tremor or oscillation takes place, just as a shaking of the hand occurs after powerful and long-continued exertion, when the nervous supply is not adequate to the demand. On this principle alone, I think, all diseases of the first class may be accounted for.

When the nervous influence is sent forth too copiously, a high and long-continued action of a muscle, or set of muscles, is induced, giving rise to diseases of the 2d class.

In the great majority of cases, there is a mixture of the tremulous and convulsive movements, which forms our 3d class of diseases. And this fact, more than any other, has

tended to convince me, that all irregular movements of the muscular system are principally dependant upon an irregular supply of nervous power to the muscular fibre. After the nervous power has been sent forth for some time too scantily to maintain a tonic action in the muscular fibre, and thus produced a tremor of a part, or of the whole system : From the former retardation, probably, it rushes forth afterwards, at intervals, in copious profusion, and thus occasions in the muscles, which were formerly tremulous, rapid and strong convulsive movements.

If there is any truth in these observations, the state of the brain and spinal cord, in all diseases of the muscular movement, above all other circumstances, should be attended to ; and the only rational method of breaking up the morbid action which obtains in these parts, is to excite a new action, either in the diseased parts themselves, or in their immediate neighbourhood.

Morbid muscular movement may be occasioned by a diseased state of the brain, or its prolongation ; by a diseased state of the tunics which surround these ; or by a diseased state of their bony encasement. At a future time, I shall prove the truth of these observations, by references to a number of important cases and dissections.

The grand indication, then, being to excite a new action in the vicinity of the brain and spinal marrow, different plans of treatment will suggest themselves to different practitioners.—I have indeed a great partiality for the use of tartar emetic ointment ; but I do not however suppose that it possesses any specific virtue over such diseases. Blisters—the moxa—the actual or potential cauteries, will produce, in all probability, the same effects ; and in some diseases which run their courses with uncontrollable fury, as tetanus or hydrophobia, the potential or actual cautery may be found preferable to all external applications. But for the majority of diseases of the muscular movement, the tartar-emetic ointment will be found to possess superior claims to our consideration. It is less formidable in the eyes of the patient even than a blister, and infinitely less so than the actual cautery. It is easily managed and surer, and can be made more speedy in its operation than a blister, not to speak of the friction by which it is applied, and to which, probably, some little efficacy may occasionally be attributed.—*Edinburgh Med. and Surg. Journal.*

Mr. Cox on the Peculiar Species of Convulsion in Children.

I am happy to find that the peculiar species of convulsion, described by the late Dr. John Clarke, has lately occupied the attention of the Profession, as, from circumstances within my own knowledge, I am inclined to think it is a disease of the infantile state which has been very much overlooked. Having by me notes of a few cases which were taken at the time of their occurrence, I have thought they would not be unacceptable to such of your readers as may feel interested in the subject. With respect to the name of this disease, perhaps it may be as well to leave it as Dr. Clarke has designated it; if, however, another name must be substituted, I should prefer calling it cerebral croup. The term spasmodic croup has been strongly objected to, and, perhaps, with great propriety, inasmuch as it tends to confound it with cynanche trachealis, from which it differs entirely in its nature. It is very common, in conversing with Medical Practitioners, (at least, it has occurred to me very frequently,) to be told, "I have had a great deal of croup lately among children :" if you inquire as to the comparative fatality of the disease, the answer is, "Oh! I have succeeded in curing almost all of them!"—only, perhaps, losing three or four out of a dozen cases. Now, independently of the rarity of cynanche trachealis, I do not believe it to be a disease in which recovery so frequently occurs ; and after deducting from this number those of the disease in question, and, which are still more numerous, those of acute bronchitis, I think the remainder will be but very few in number.

With regard to the seat of the disease, it certainly is not a matter of such little importance as to be slightly passed over. It is very much to be regretted that the diseases of children are so frequently looked at through a particular medium, for as surely as this is the case will the disease be referred to this or that particular cause ; and that all diseases, or nearly all, should be referred to one cause, is certainly laying down, in theory, what can never be found in practice, and is the means of introducing an empirical mode of treating a disease, which cannot be applicable to its various forms. Thus, teething, worms, gastric derangement, and some others, in their turn, according as they may have the ascendancy, are compelled to be the cause of every disease to which a child is liable. These remarks are perfectly applicable to the disease in question. Cases of this disease have come under my no-

tice where there has not been one symptom of gastric derangement—the belly being free from pain, and the motions perfectly healthy.* On the other hand, I have seen the disease without any symptom of cerebral affection, but with considerable derangement of the abdominal secretions, and sometimes extreme pain in the belly. The disease appears to me to consist of a convulsive action of the trachea, something, but not always, attended with a convulsive action of other parts of the body, as the face, hands, or feet. This morbid action I consider as arising from cerebral irritation, which may be either symptomatic or idiopathic ; when it is unattended by symptoms of excitement of the brain, I suppose the diseased action to be transmitted through the medium of this organ, without actual inflammation existing in it. I have known it occur, in three instances, either preceded or followed by mesenteric disease. In the three instances in which I have known it prove fatal, the children all died in a fit which came on unexpectedly. In one of these cases, although the stools had been black, brown, green, and slimy, no structural disease in the abdomen could be detected on a careful dissection : the head was not examined. In another case, the only appearance of disease was ulceration of the internal and middle coats of the small intestines : the head was not examined. I was not present at either of these examinations. Another case was attended with considerable enlargement of the head and the usual symptoms of chronic hydrocephalus : when I last saw this child, I considered it past recovery.

The symptoms of this disease will, perhaps, be best illustrated by relating a few cases. I recollect, however, an instance, the particulars of which I have not committed to paper, in which the child was particularly fond of a man residing in the same house ; this man, by way of amusing the child, had been in the habit of dancing it violently in his arms, at which it was accustomed to express itself highly gratified. When, however, it became affected with this disease, this motion invariably occasioned the crouping noise ; and, at last, the mere sight of this man produced it, attended with considerable distress, and apparently threatening suffocation.

With respect to the treatment, when it appears to arise from idiopathic cerebral excitement, especially if it be attended with general convulsions, we should lose no time in the application of leeches to the temples, and blisters behind

* Hydrocephalus also sometimes occurs under these circumstances.

the ears. I have put this mode of treatment to the test, by adopting it, and administering no other medicine than the common saline mixture, and with perfect success.*

Where abdominal irritation appears to be the cause, unattended by any symptoms of disease in the head, we may expect one or other of the following symptoms: either a considerable derangement of the abdominal secretions, or an extremely painful state of the belly, with violent fits of crying and drawing of the legs towards the abdomen, and sometimes the passing of a considerable quantity of wind *per anum*, followed by immediate relief. The secretions of the liver and mucous membrane of the intestines being deranged, the plan I have found most successful is a moderate dose of hyd. submur. and pulv. rhei one morning, and ol. ricini the next, persevered in for some time, giving also twice a day sodæ carb., pulv. rhei., and infus. calumbæ. When pain in the belly exists, it is usually relieved by the warm-bath and a combination of magnes. carb., pulv. rhei. and aq. menthae. The diet of a child, under these circumstances, is of considerable importance; the breast is by far the best mode of nourishment, and to it the child should be confined, if practicable. If the gums be full, they ought, by all means, to be lanced. The combination of abdominal and cerebral affection is, perhaps, most

* I cannot omit this opportunity of entering my protest against the misplaced timidity with respect to the application of leeches to children. It is said young children cannot bear active or repeated depletion, and that if submitted to such treatment, they sink under it. This may apply to a child eight days or eight weeks of age, but certainly not to a child of eight months or upwards: after this period they bear depletion well, and possess powers of recovery from an extremity of disease far greater than those of the adult: in the latter there are, in many diseases, symptoms which will induce an experienced Practitioner to say there is no chance of recovery, but will he say so of children? I will venture to assert he will not: and I am sure every mother who has reared a family will bear testimony to the extraordinary powers of recovery which children possess. It is also said that repeated application of leeches reduces the powers of the system, and renders it irritable, thereby becoming a source of irritation to the existing disease. The soothing plan is at present the favourite with many Practitioners: it has not been my good fortune to witness any good effects from this plan in many cases in which I have seen it recommended; the ill effects arising from it have frequently presented themselves to my notice in the form of chronic structural disease, which admitted of no relief. Within the last six years I have seen upwards of ten thousand cases of diseased children; and during that time, prescribing, as I have done, for thirty, forty, or fifty children of a morning, I have so constantly been in the habit of seeing neglected cases of inflammation of the lungs or the brain, or of fever accompanied by these, that it is my firm belief more children have died from the neglect of leeching than ever adults have died from famine or the sword.

frequently the case in this disease : when it is so, we should not suppose that mere attention to the abdominal functions will remove the complaint—it will not do so. I recollect, in a case of this description, a friend of mine, who had frequently differed with me in opinion as to the propriety of repeatedly bleeding children, cautioned me against the application of leeches and blisters : it was considered to be a case beyond recovery, there being, to all appearance, effusion in the ventricles. The child was about a year and a half old; and although much emaciated, I applied two leeches to the temple, and rubbed the ung. lyttæ behind the ears : the symptoms were somewhat relieved. The leeches were repeated a second and third time. The child perfectly recovered ; and on being shewn to the gentleman alluded to, he was much surprised. In the course of the disease, the lungs sometimes become the seat of inflammation, requiring the application of leeches to the chest. I shall conclude with the following cases of this disease :

CASE I.

Mary Anne Richards, aged seven months.—March 16, 1824. The present ailment was noticed soon after the birth of the child, and within the last three months has rapidly increased in violence. The breathing is constantly shrill, and when disturbed it becomes quite croupy : whenever the child awakes the noise is violent, whether she awakes crying or not. When taking the breast, she requires to be removed about every two minutes, and sometimes oftener, as she seems almost suffocated : distress is occasioned by lying flat on the bed, except the head is much raised : at the time of making the crouping noise, her face, arms, and legs, become very dark-coloured—almost purple : her appearance is plump, her belly soft, and of moderate size: very seldom two motions of the same appearance succeed each other—never a healthy one—four or five in the twenty-four hours, generally dark-green and slimy—occasionally very offensive : head not at all drooping—quite lively. Puly, rhei, gr. iij. ; hyd. submur. gr. j. ft. pulv. Ol. ricini, 3j. Alt. aur. sumend.

19th.—The motions are still offensive, but of a lighter green colour: the crouping noise has only occurred twice in two days. Contin. medic.

25th.—The noise alluded to has entirely left her : breath rather short, with a slight cough: no increase of heat of the

skin, but the tongue is white : motions relaxed, consisting principally of white slime. Cont. med.

April 6th.—No crouping noise : breath rather shorter : on the strictest inquiry, no convulsive action of the face, hands, or feet, have occurred. Hirudo sterno. Contin. ol. et pulv.

8th.—Cough rather troublesome : one healthy motion daily. Ol. et. pulv. bis hebdom. sumend. Pulv. conii, gr. jss. 4tis horis.

14th.—Coughing violent ; breathing short and thick ; moaning ; drooping of the head ; restless at night. Four offensive, knotty motions yesterday. Ol. et. pulv. alt. aur. ; contin. co-nium ; hirudo sterno ; ung. lyttæ pone aures inficand.

17th.—The head and chest much relieved : motions healthy.

20th.—Convalescent.

CASE II.

Elizabeth Bessy, aged one year.—March 18, 1824. Five months since had cough and dyspœa, with fever. These symptoms have varied in degree, but have never left her. A fortnight since was first observed to clench the fingers closely on the palm, with the thumb inside : this left her, and did not return till this morning. A month ago was noticed to make a crouping noise : it occurred when danced about in the arms ; also on coughing ; sometimes, also, it occurred when she awoke : it was sometimes so violent as to alarm the mother for fear the child should be suffocated. Early this morning she appeared extremely restless, and cried violently, kicking the legs about, and drawing them towards the abdomen. The motions have not been healthy for five months—resembling pus—extremely offensive—four in the twenty-four hours.—Slight fever ; head generally drooping ; starts occasionally during sleep. Hirud ij. temp. Ol. ricini, 3ij. ; pulv. rhei. gr. iv. ; hyd. submur. gr. j. Alt. aur. Mist. carminat. pro re nata.

23d.—The crouping noise is not so loud, neither does it occur so frequently ; head not so heavy ; belly easier. Hirud. ij. Cont. medic.

31st.—Symptoms moderate : a rash coming out on the skin.

April 1st.—The rash came out this morning, and proved to be the measles. Towards the evening she had a strong fit ; a quarter of an hour after she had another, which continued, varying in violence, till four the next morning, when she died.

The crouping noise had entirely ceased for several days previous to her death, and she was considered convalescent till the 31st.

CASE III.

Sarah Rickets,* aged ten months.—May 11, 1824. This child thrived well till the attack of this disease, which was first noticed about a week since. Without any previous indisposition or unhealthy state of the bowels, it was observed to make a strong crouping noise, which within these few days has increased in frequency and violence : its motions are quite healthy : the noise occurs every time she awakes from sleep, when in a passion, or when she laughs. For the last week the head has been observed to droop very much ; the sleep disturbed by severe startings ; and, when awake, she moans very much ; her face twitching very much, and becoming dark-coloured round the mouth and eyes ; the hands and wrists strongly contracted : one motion daily. Hirud. ij. temp. Pulv. rhei, gr. iij. ; hyd. submur. gr. j.—M. ft. pulv.—Alt. aur. sumend. Ung. lyttæ pone aures infricand.

18th.—Head not quite so heavy ; starting not so frequent nor violent ; more cheerful ; made the crouping noise twice yesterday when she cried ; face and hands much convulsed ; three healthy motions yesterday. Hirud. ij. temp. ; contin. pulv.

20th.—Cried severely seven or eight times yesterday ; kicking the legs about very much ; was much convulsed both in the hands and face, and made the noise frequently ; two healthy motions ; seems much relieved on passing wind. Mist. carminativ. 4tis horis.

24th—Quite cheerful ; head not at all drooping ; hands and face slightly convulsed this morning ; made the noise twice yesterday, but very slightly ; passes wind freely ; motions healthy ; belly free from pain.

31st.—Convalescent.

CASE IV.

Jane Jones, aged eleven months.—May 3d. About three weeks since was attacked with sneezing, and other catarrhal symptoms. Ten days since she began to make the crouping noise on waking from her sleep ; she now does it whenever she is irritated : she appears to attempt to cry, and not being able, to expand the chest till she has made powerful efforts four or five times, at each of which the noise is made : her lips occasionally look very dark-coloured, but this appearance

* The mother's sister had a child to nurse who died of this complaint : it continued ill three months, and died in a fit.

goes off in a few minutes ; her eye-lids also assume the same appearance : she occasionally moans. Yesterday her hands were both half-closed at intervals throughout the day, and the noise was greater than ever : one slimy motion. *Pulv. rhei, gr. iv. ; hyd. submur. gr. ij., ft. pulvis. Ol. ricini, 3ij. alt. aur. sumend.*

10th.—Very restless last night ; noise violent ; eyes slightly convulsed ; great heat of skin ; perspires violently at times : one healthy motion daily. *Contin. medic.*

17th.—Made the noise but very slightly yesterday ; not convulsed ; two relaxed, dark, offensive motions ; more cheerful ; occasionally cries out violently, kicking the legs about, and drawing them towards the abdomen. *Rep. medic. ; mist. carminativ. ; balneum tepid. pro re nata.*

24th.—Improving generally ; abdominal pains relieved ; motions more healthy.

June 3d.—Convalescent. —

CASE V.

James Knowles, aged eight months. April 29, 1824.—Thrived well till the age of three months, when he began gradually to waste away, and, on waking one morning from his sleep, made a crouping noise ; it increased in frequency and violence and now occurs eight or nine times a day, sometimes three or four times ; crying, or fretting without crying, will produce it ; the draught coming suddenly into the breast whilst he sucks also produces it. He starts and jumps in his sleep, moans frequently, and droops the head. Three weeks since he had a severe fit, which lasted about ten minutes.—Since this time he has had eight fits a day at irregular intervals : they sometimes come on with the crouping noise : sometimes he throws himself out straight, and remains stiff till the fit is over ; he is then very black about the eyes and mouth, and these parts are much convulsed. He has a severe cough, coming on in paroxysms, and is frequently out of breath from coughing, without making the noise. Bowels rather costive ; one or two motions a day—black, brown, or grass-green—occasionally curdled or slimy. All I know further of this case is, that the child died in a fit. A friend of mine examined the abdomen after death, but could not discover any thing morbid in it : the head was not examined.—*London Medical Repository*